					DEPARTMEN [*]	T OF NA	OF UTAH ATURAL RESO GAS AND M				AMEN	FO DED REPOR	RM 3		
		AF	PLICATION	FOR I	PERMIT TO DRILL					1. WELL NAME and N		2-9C1CS			
2. TYPE O	F WORK	DRILL NEW WELL	REENTE	ER P&/	A WELL DEEPEN	I WELL [3			3. FIELD OR WILDCA	T NATURAL	. BUTTES			
4. TYPE O	F WELL				ed Methane Well: NO	.,,,,,,				5. UNIT or COMMUNI	TIZATION	AGREEM	ENT NAM	1E	
6. NAME O	F OPERATOR				SAS ONSHORE, L.P.					NATURAL BUTTES 7. OPERATOR PHONE 720 929-6100					
8. ADDRE	SS OF OPERAT									9. OPERATOR E-MAI	L				
	AL LEASE NUM		P.O. BOX 1737		enver, CO, 80217	SHIP				12. SURFACE OWNER		anadarko.c	JIII		
		JTU 01196-B	16 1)		FEDERAL INI	DIAN () STATE () FEE(0	0	DIAN (STATE	~	EE 💭	
		OWNER (if box 12								14. SURFACE OWNE		`			
15. ADDR	ESS OF SURFA	CE OWNER (if box	12 = 'fee')							16. SURFACE OWNE	R E-MAIL	(if box 12	= 'fee')		
	N ALLOTTEE OI = 'INDIAN')	R TRIBE NAME			18. INTEND TO COMM MULTIPLE FORMATIO		PRODUCTION	NFROM		19. SLANT					
					YES (Submit C	Comming	gling Applicati	on) NO	<u> </u>	VERTICAL DI	RECTION	AL D	IORIZONT	TAL 🔵	
20. LOC	TION OF WELL			FO	OTAGES	QT	TR-QTR	SEC.	TION	TOWNSHIP	R.	ANGE	МЕ	ERIDIAN	
LOCATIO	N AT SURFACE		16	87 FN	IL 2309 FEL		SWNE	9		10.0 S	2:	2.0 E		S	
Top of U	ppermost Prod	ucing Zone	48	32 FNL	_ 2341 FWL		NENW	9		10.0 S	2:	2.0 E		S	
At Total			48		_ 2341 FWL		NENW	9	<u> </u>	10.0 S	22.0 E S		S		
21. COUN	TY	UINTAH			22. DISTANCE TO NEA		EASE LINE (F	eet)		23. NUMBER OF ACR		ILLING UN 20	IT		
					25. DISTANCE TO NEA (Applied For Drilling	or Comp		POOL		26. PROPOSED DEPT	H D: 9201	TVD: 898	1		
27. ELEV	ATION - GROUN	D LEVEL 5228			28. BOND NUMBER	WYBO	000291			29. SOURCE OF DRIL WATER RIGHTS APPR	OVAL NU		PPLICAB	LE	
					Hole, Casing	, and C	Cement Info	rmation							
String	Hole Size	Casing Size	Length		ight Grade & Th		Max Mud Wt.			Cement		Sacks	Yield	Weight	
Surf	11	8.625	0 - 2460	28	3.0 J-55 LT	&C	0.2	2		Type V Class G		180 270	1.15	15.8 15.8	
Prod	7.875	4.5	0 - 9201	11	1.6 L-80 LT	&C	12.	0	Pren	nium Lite High Stre	ngth	300	3.38	12.0	
										50/50 Poz 2360			1.31	14.3	
					А	TTACH	HMENTS								
	VER	IFY THE FOLLO	WING ARE A	TTAC	HED IN ACCORDAN	NCE WI	TH THE UT	AH OIL AI	ND GAS	CONSERVATION G	SENERA	L RULES			
w w	ELL PLAT OR M	AP PREPARED BY	LICENSED SUR	VEYOF	R OR ENGINEER		№ сом	PLETE DR	ILLING PI	LAN					
AF	FIDAVIT OF STA	TUS OF SURFACE	OWNER AGRE	EMEN	T (IF FEE SURFACE)		FORM	/ 5. IF OPE	RATOR IS	S OTHER THAN THE L	EASE OW	NER			
I DIF	RECTIONAL SUI	RVEY PLAN (IF DIR	ECTIONALLY (OR HO	RIZONTALLY DRILLED))	торо	GRAPHIC.	AL MAP						
NAME Jo	el Malefyt				TITLE Regualtory Ana	lyst			PHONE	720 929-6828					
SIGNATU	RE				DATE 07/02/2014				EMAIL j	oel.malefyt@anadarko	.com				
	BER ASSIGNED)4754568(Barn	O GUI									
							Permit Manager								

NBU 1022-9G PAD Drilling Program

1 of 4

Kerr-McGee Oil & Gas Onshore. L.P.

NBU 1022-9C1CS

Surface: 1687 FNL / 2309 FEL SWNE BHL: 482 FNL / 2341 FWL NENW

Section 9 T10S R22E

Unitah County, Utah Mineral Lease: UTU 01196-B

ONSHORE ORDER NO. 1

DRILLING PROGRAM

1. & 2.a <u>Estimated Tops of Important Geologic Markers</u>: <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations</u>:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,197'	
Birds Nest	1,554'	Water
Mahogany	2,011'	Water
Wasatch	4,388'	Gas
Mesaverde	6,864'	Gas
Sego	8,981'	Gas
TVD =	8,981'	
TD =	9,201'	

2.b Kerr McGee Oil & Gas Onshore LP (Kerr McGee) may elect to drill to (i) the Blackhawk formation (part of the Mesaverde Group), (ii) to a shallower depth within the Mesaverde Group, or (iii) to the Wasatch Formation. If Kerr McGee drills to the Blackhawk formation, please refer to Blackhawk as the bottom formation. The attached Blackhawk Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the deeper formation.

If Kerr-McGee drills to a shallower depth in the Mesaverde Group or to the Wasatch Formation, please refer to the attached Wasatch/Mesaverde Drilling Program which includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the shallower formations.

3. Pressure Control Equipment

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

NBU 1022-9G PAD Drilling Program
2 of 4

4. <u>Proposed Casing & Cementing Program:</u>

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

5. <u>Drilling Fluids Program:</u>

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

6. <u>Evaluation Program</u>:

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

7. **Abnormal Conditions:**

Wasach Formation/Mesaverde Group

Maximum anticipated bottom hole pressure calculated at 8981' TVD, approximately equals 5,478 psi (0.61 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 3,526 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

9. <u>Variances:</u>

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

10. <u>Other Information:</u>

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

NBU 1022-9G PAD Drilling Program
3 of 4



Max anticipated

12.0 ppg

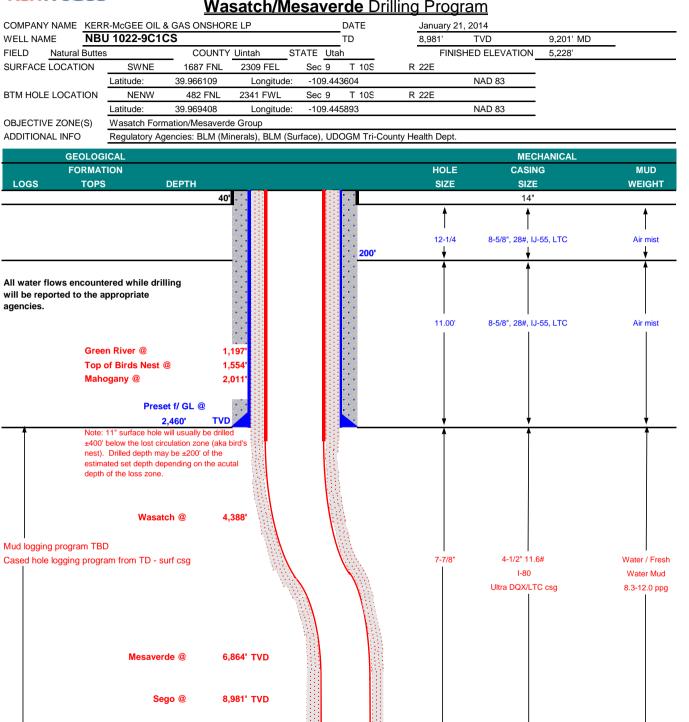
Mud required

8,981' TVD

9,201' MD

TD@

KERR-McGEE OIL & GAS ONSHORE LP Wasatch/Mesaverde Drilling Program



NBU 1022-9G PAD Drilling Program



KERR-McGEE OIL & GAS ONSHORE LP Wasatch/Mesaverde Drilling Program

CASING PROGRAM	<u>//</u>	DESIGN FACTORS									
				LTC	DQX						
	SIZE	INT	ERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TE	NSION
CONDUCTOR	14"	0	-40'								
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,460	28.00	IJ-55	LTC	2.19	1.63	5.77	N/A
								7,780	6,350		267,035
PRODUCTION	4-1/2"	0	to	5,000	11.60	I-80	DQX	1.11	1.13		3.06
								7,780	6,350	223,000	
	4-1/2"	5,000	to	9,201'	11.60	I-80	LTC	1.11	1.13	5.60	

Surface Casing:

(Burst Assumptions: TD = 12.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.61 psi/ft = bottomhole gradient (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

CEMENT PROGRAM

1	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGH [*]	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
		+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water to su	ırface, option	2 will be uti	lized	
Option 2 LEAD	1,960'	Premium cmt + 16% Gel + 10 pps gilsonite	240	35%	12.00	2.86
		+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps				
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
		+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	3,881'	Premium Lite II +0.25 pps celloflake + .4% FL-52	300	35%	12.00	3.38
		+ .3% R-3 + .5 lbs/sk Kol-Seal + 6%Bentonite II +				
		1.2% Sodium Metasilicate + .05 lbs/sk Static Free				
TAIL	5,320'	50/50 Poz/G + 10% salt + .05 lbs/sk Static Free	1,260	35%	14.30	1.31
		+ 1.2% Sodium Metasilicate + .5 % EC-1				
		+.002 gps FP-6L + 2% Bentonite II				

^{*}Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

FLOAT EQUIPMENT & CENTRALIZERS

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

PRODUCTION

Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well. 1 centralizer on the first 3 joints and one every third joint thereafter.

ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

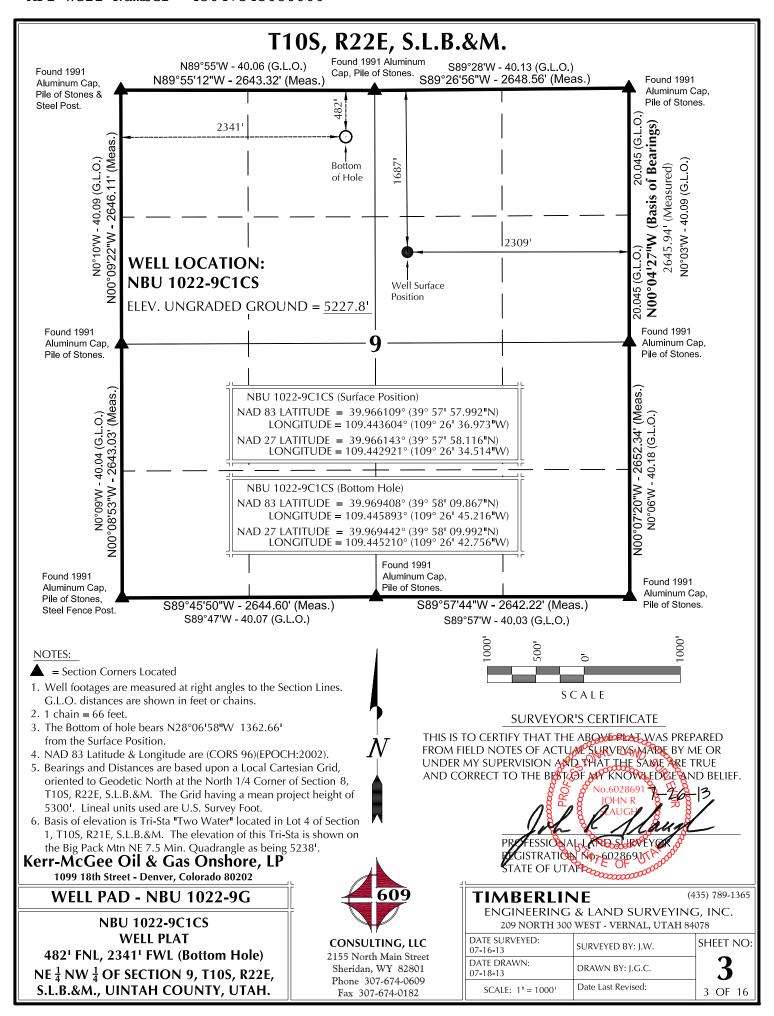
Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

IF extreme mud losses are observed OR cement doesn't reach surface on a well on the pad, a DV Tool may be used. With Cement Baskets above and Below it.

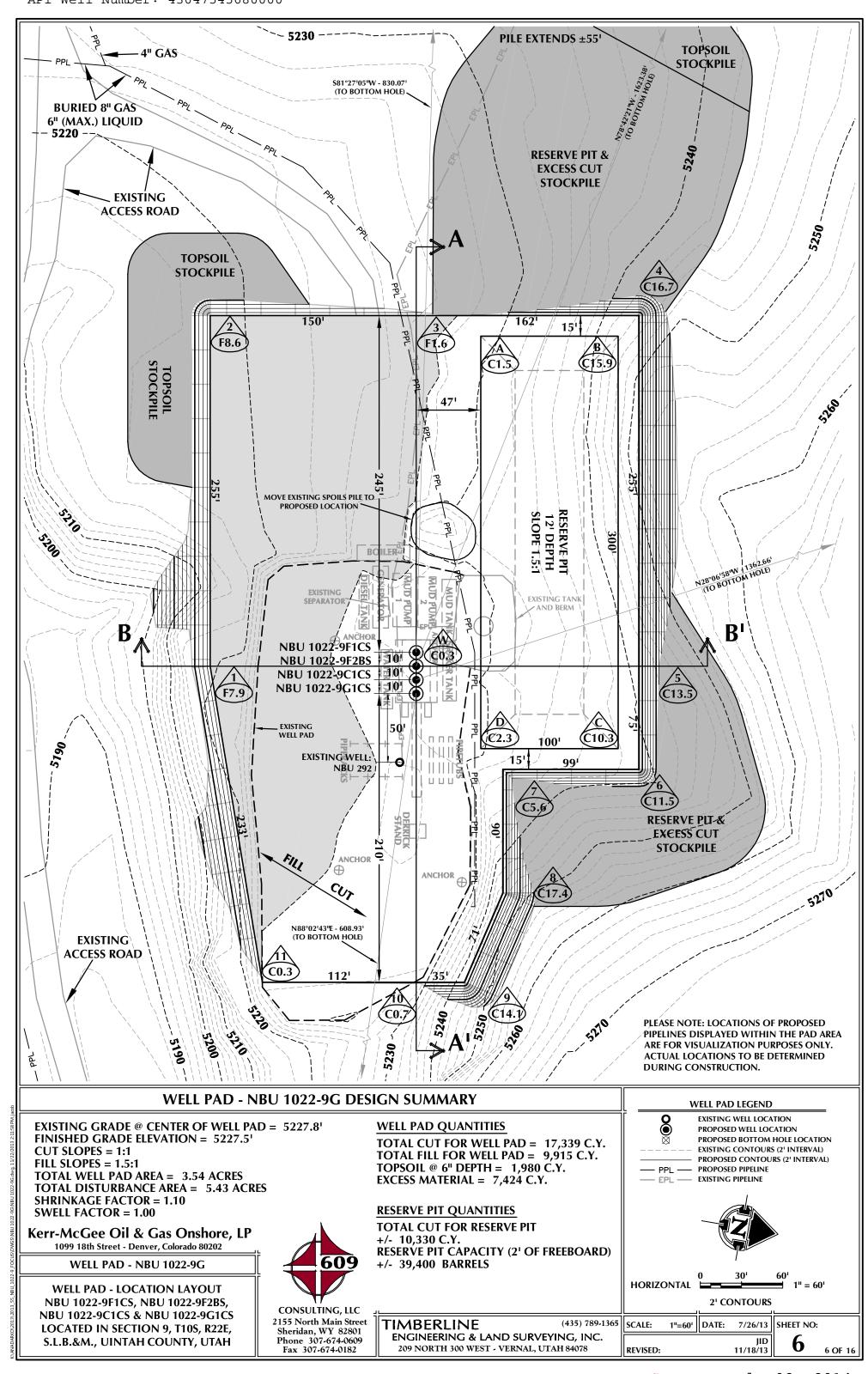
DRILLING ENGINEER:		DATE:
	Eric Giles / Tyler Elliot / Frank Fernandez	
DRILLING SUPERINTENDENT:		DATE:
	Kenny Gathings / Lovel Young	

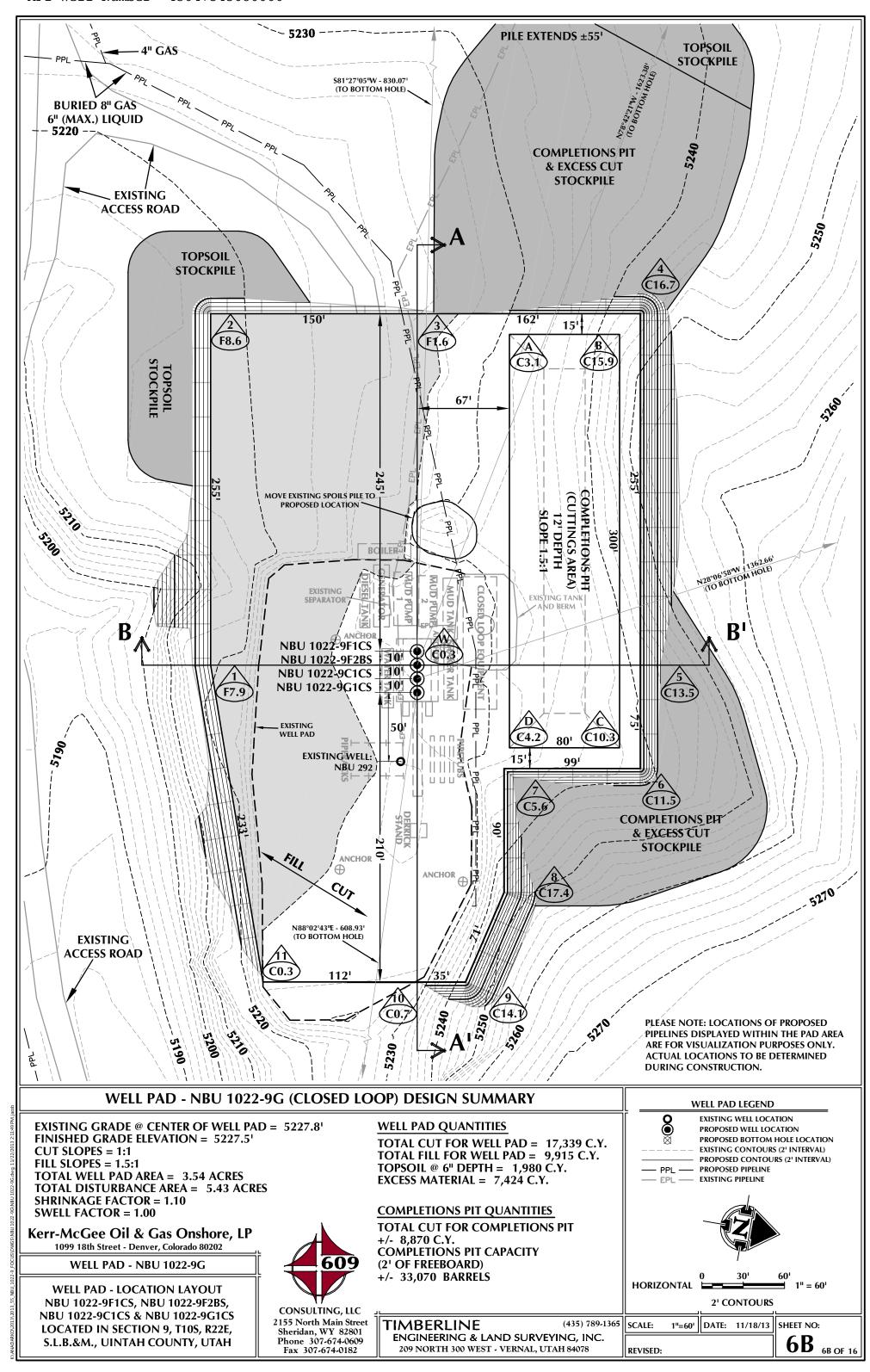
4 of 4

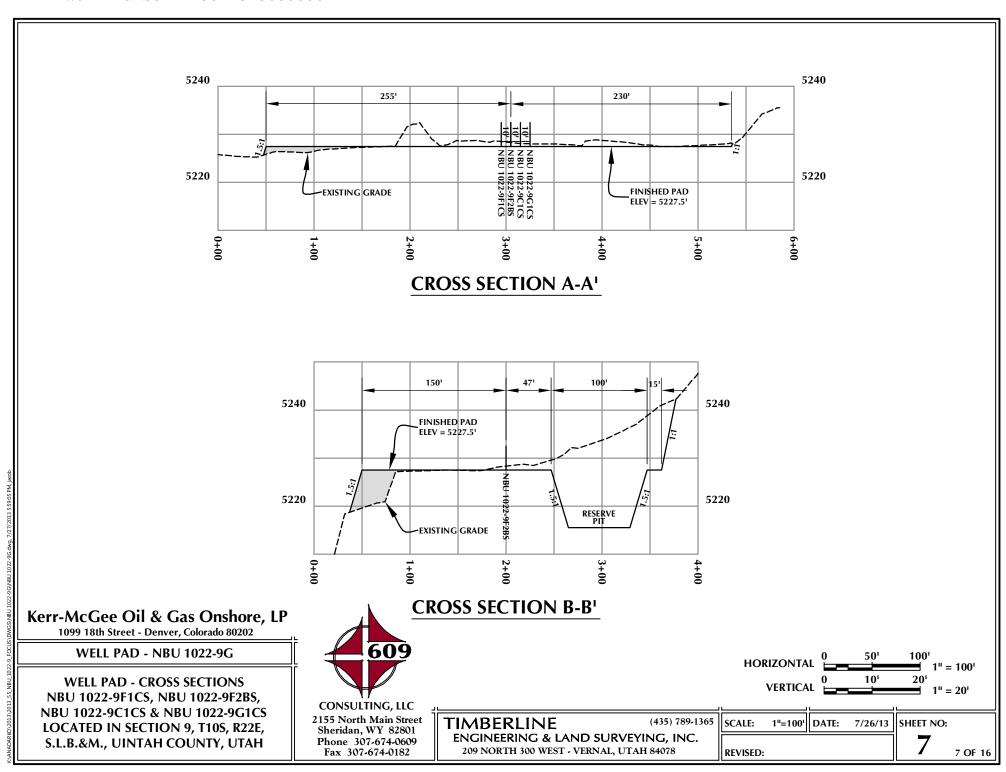
^{*}Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

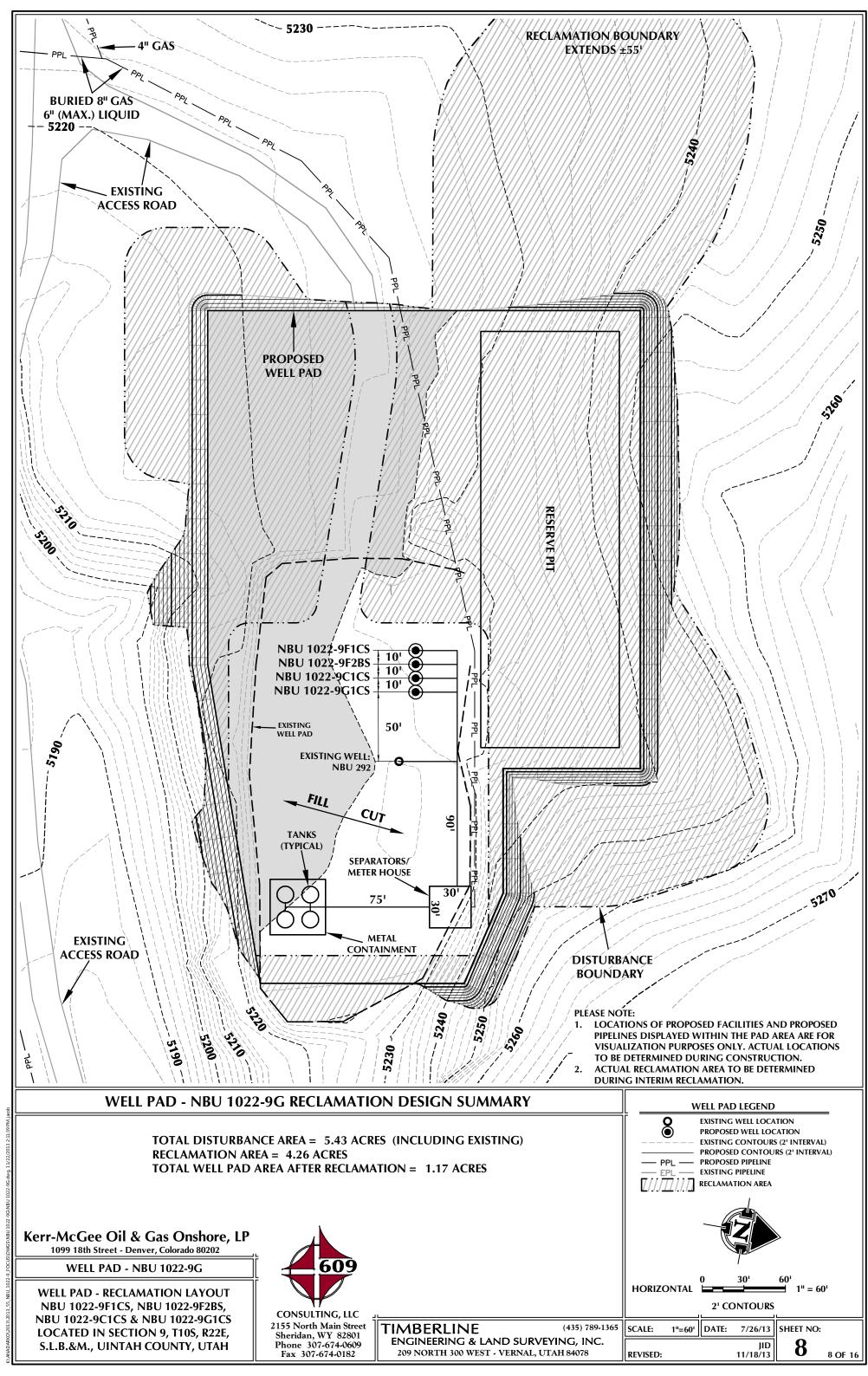


WELL NAME		Dog	SURFACE PO						205	В	OTTOM HOLE		I
	NA LATITUDE	LONGITU	DE LATITU	NAD27 IDE LONGI	TUDE	FOOTAGES	LATIT	NAE UDE		GITUDE	NAI LATITUDE	D27 LONGITUDE	FOOTAGES
NBU		N 109°26'37.22	6"W 39°57'58.	082"N 109°26'34	.767"W	1690' FNL	39°57'56	6.740"N	109°26	'47.766"W	39°57'56.864"N	109°26'45.307"W	
1022-9F1CS	39.966099°N	109.443674			91°W	23291 FEL	39.9657			6602°W	39.965796°N	109.445919°W	2139¹ FWL
NBU 1022-9F2BS	39°57'57.975" 39.966104°N	109°26'37.09 109.443639°		099"N 109°26'34 9°N 109.44295		1688' FNL 2319' FEL	39°58'0′ 39.9669			'57.539"W 9316°W	39°58'01.243"N 39.967012°N	109°26'55.079"W 109.448633°W	1369' FNL 1379' FWL
NBU	39°57'57.992"l			116"N 109°26'34		1687' FNL				'45.216"W		109°26'42.756"W	
1022-9C1CS	39.966109°N	109.443604°	N 39.96614	3°N 109.44292	21°W	23091 FEL	39.9694	08°N	109.445	5893°W	39.969442°N	109.445210°W	2341' FWL
NBU 1022-9G1CS	39°57'58.010" 39.966114°N	109°26'36.84 109.443568°	7"W 39°57'58. N 39.96614	134"N 109°26'34 3°N 109.44288		1685' FNL	39°57'58 39.9661	8.214"N 70°N		'29.032"W 1398°W	39°57'58.338"N 39.966205°N	109°26'26.574"W 109.440715°W	
	39°57'57.979"l			104"N 109°26'33		2300' FEL 1688' FNL	33.3001	7011	103.44	1330 W	33.300203 11	109.440/13 W	1691' FEL
NBU 292	39.966105°N	109.443385°	N 39.96614	D°N 109.44270	D2°W	2248' FEL							
WELL NAME	NORTH	EAST	WELL NAME	TIVE COORDIN	EAST			to Botto		EAST	WELL NAM	1E NORTH	EAST
NBU 1022-9F1CS	-123.4	870.8	NBU 1022-9F2BS	317.9'	-1591.9	9 NBU 1022-9	C1CS	1201	.9'	-642.21	NBU 1022-9G1C	20.8'	608.6
N78	Az=281 3°42'21"W To Bottom	^{29417°} - ¹⁶²³ .38		728°06'58"N Tole)	0.	10'		_		BSERVAT	79°53'35"E	.R N00°04'27"\	V.
N .09	Az=26 S81°27'0! (To Bo	51.45139° 5"W - 830 ottom Hole	.07'	I D	12	78U 1022-951CS	1 SOCICS PL 10 Exist. N.H.=89.603-1.8 80.9	Exist N.H.=93.45. 71.0	12500° 51.4	NBU 292	N88°02	143"E - 608. Bottom Hole	
N N Kerr-McC	Az=26 S81°27'0! (To Bo	51.45139° 5"W - 830 5ttom Hole	.07'	LP	12	78U 1022-951CS	1 0C1CS P.T. 10 Exist. V.H.=89.6032.8° 80.9	914	1,2500° 51.4	NBU 292	N88°02	'43"E - <u>60</u> 8.	
N 	Az=26 S81°27'0! (To Bo	L E & Gas O enver, Colora	.07'	LP	12	78U 1022-951CS	1 Socies N. 10 Exist. N. H. 89, 6032 80.9	Exist. N.H. 93.45 80.71.0	1,3500° 51.A.	NBU 292	N88°02 (To E	3'43"E - 608. Bottom Hole	35) 789-1365
WEL	Az=26 S81°27'0! (To Bo S C A Gee Oil o Bth Street - D	L E S Gas O enver, Colora	nshore, ado 80202 22-9G	LP	12	NBU 1022-9F2BS NZ. 10 EXIST. N. 1.	1 0C1CS PL 10 Exist. N.H. =89, 603-278° 80.9	Exist. N.H. 93.45 80.71.0	Losoo SA.A. IMB	NEW 292 BERLIN NEERIN	N88°02 (To B	SURVEYING	35) 789-1365 G, INC.
Kerr-McC 1099 18 WELL	Az=26 S81°27'0! (TO BG SCA Gee Oil 68th Street - D PAD INT	L E S Gas O enver, Colora	nshore, ado 80202 22-9G CE PLAT		78U 102	VBU 1022-9F1CS NZ. 10 EXIST. N. 19		Exist. N.H. =93.4.2.8.63.2	Losoo SA.A. IMB	SERLI VEERIN NORTH 3	N88°02 (To E	SURVEYINC RNAL, UTAH 840	35) 789-1365 G, INC.
Kerr-McC 1099 18 WELL WELLS - NE	Az=26 S81°27'0! (TO BG S C A Gee Oil 6 8th Street - D L PAD - PAD INT BU 1022-9	L E S Gas O enver, Colors FICS, NBU	nshore, ado 80202 22-9G CE PLAT 1022-9F2	BS,	ZBU 10ZZ	78U 1022-9F1CS NZ. 10 EXIST. N. 19 609 ILLING, LLC	C	Exist. N. H. =93. Ar. 17028° 61. 1 DATE 07-10	ENGIN 209 E SURVI	BERLI NEERIN NORTH 3	N88°02 (To B	SURVEYINC RNAL, UTAH 840	35) 789-1365 G, INC. D78 SHEET NC
Kerr-McC 1099 18 WELL I WELLS - NE NBU 10	Az=26 S81°27'0! (TO BG SCA Gee Oil 68th Street - D PAD INT	L E S Gas O enver, Colors NBU 10 ERFEREN F1CS, NBU & NBU 10	nshore, ado 80202 22-9G CE PLAT 1022-9F2 22-9G1CS	BS, (2	78U 102.	VBU 1022-9F1CS NZ. 10 EXIST. N. 19	C et	Exist. N. H. =93. Ar. 17028° 61. 1 DATE 07-10	IMB ENGIN 209 E SURVI 6-13 E DRAW	BERLI NEERIN NORTH 3	N88°02 (To E	SURVEYINC RNAL, UTAH 840 BY: J.W.	35) 789-1365 G, INC.









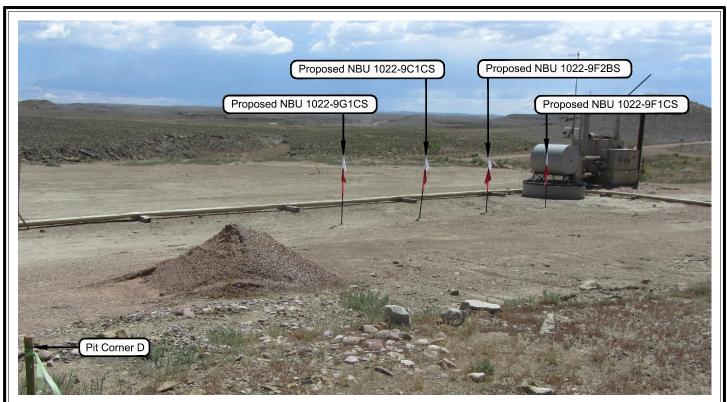


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: SOUTHWESTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: NORTHEASTERLY

Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-9G

LOCATION PHOTOS NBU 1022-9F1CS, NBU 1022-9F2BS, NBU 1022-9C1CS & NBU 1022-9G1CS LOCATED IN SECTION 9, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.



CONSULTING, LLC 2155 North Main Street Sheridan, WY 82801 Phone 307-674-0609 Fax 307-674-0182

TIMBERLINE

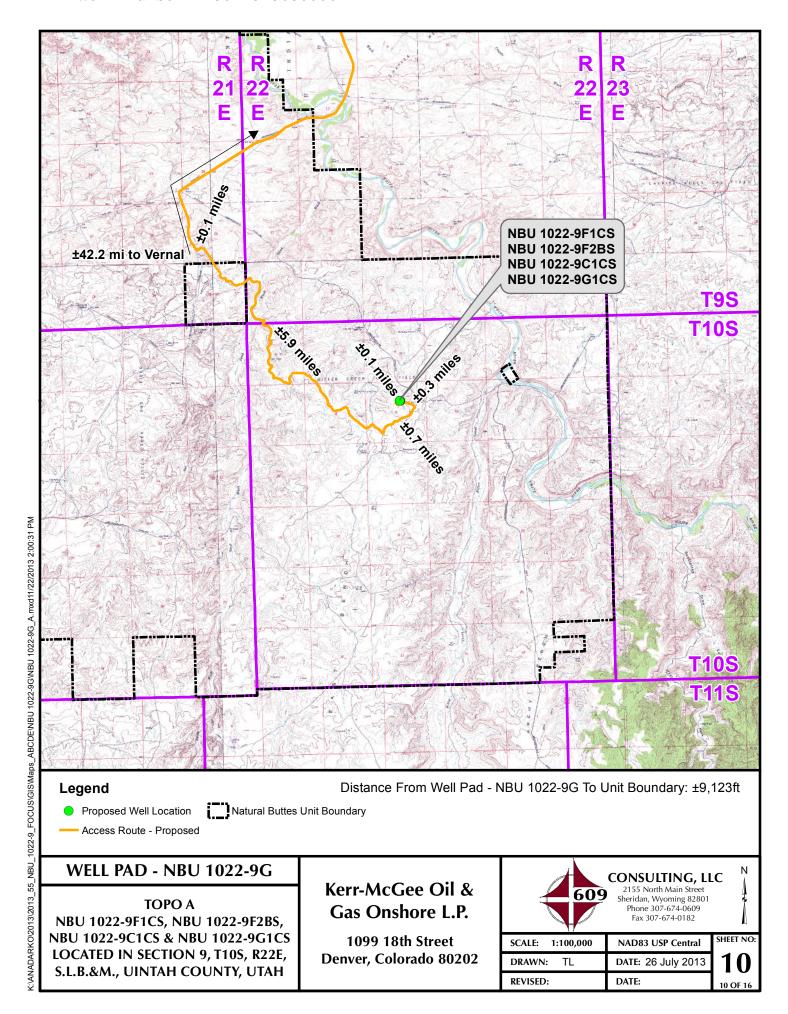
Date Last Revised:

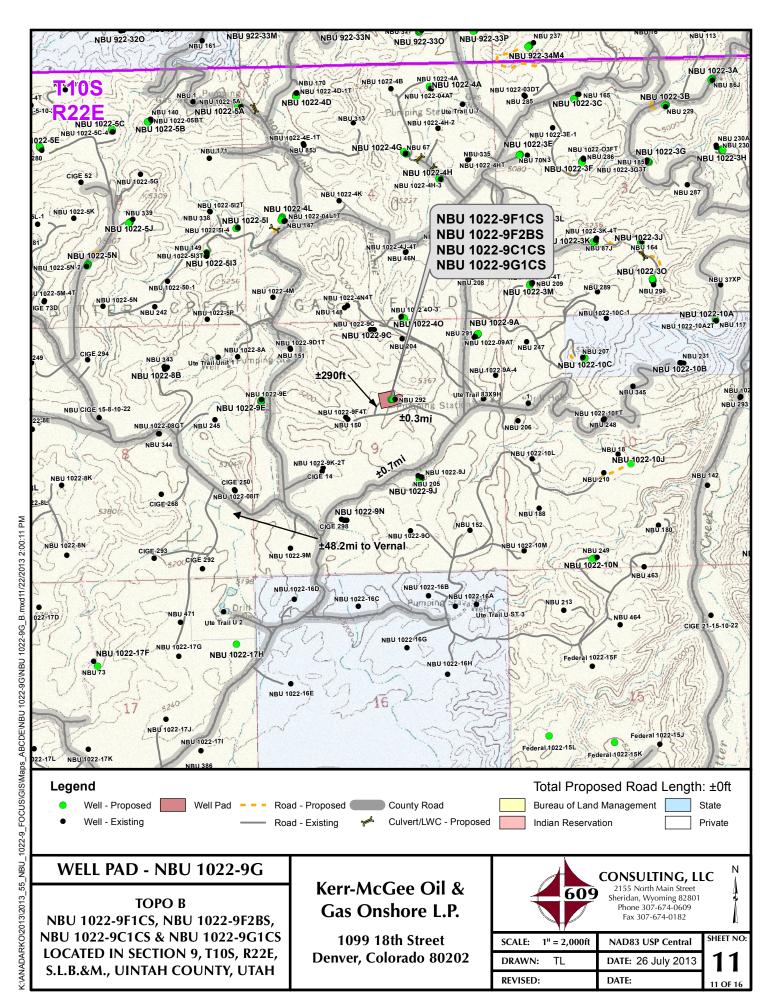
(435) 789-1365

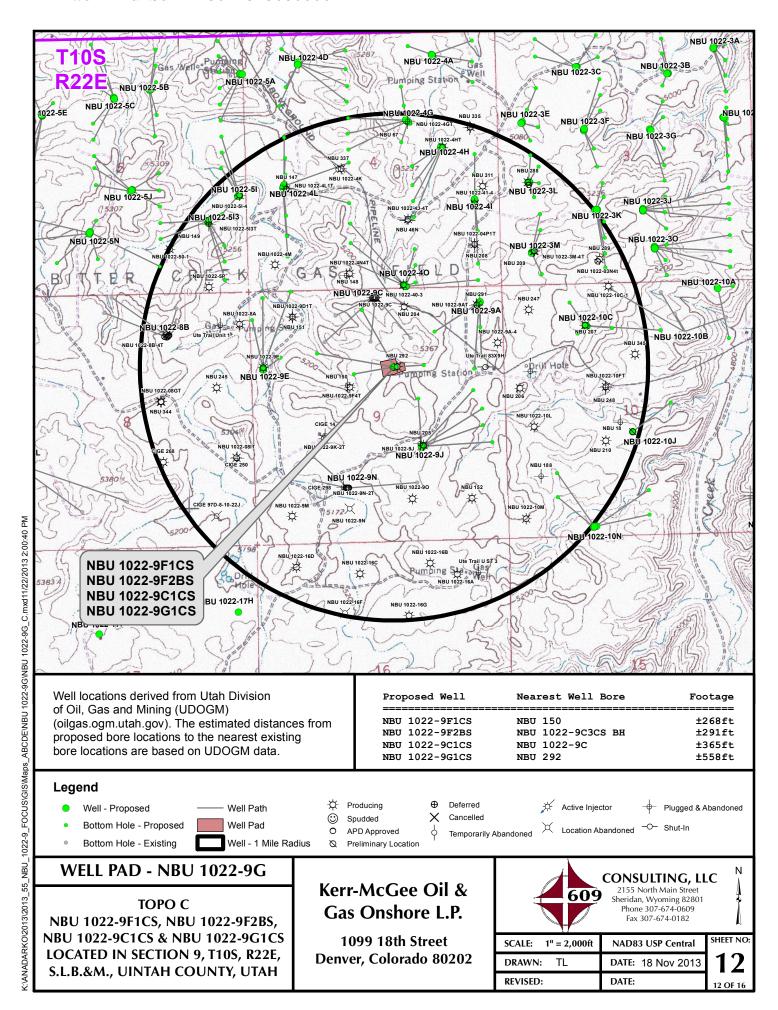
9 OF 16

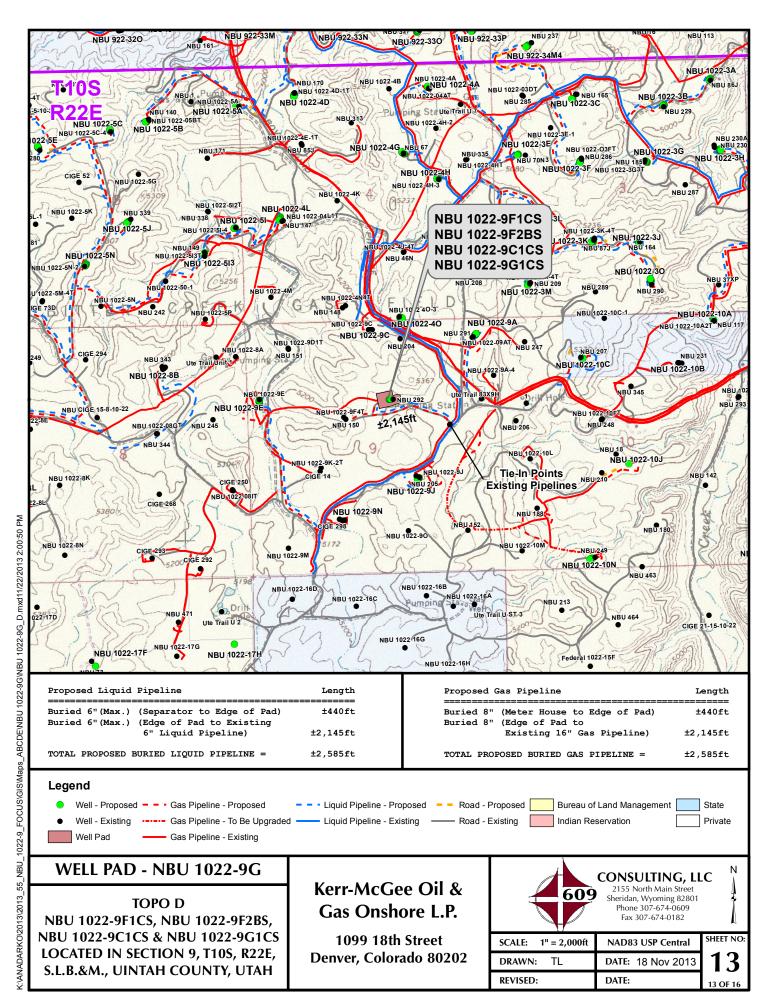
ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078

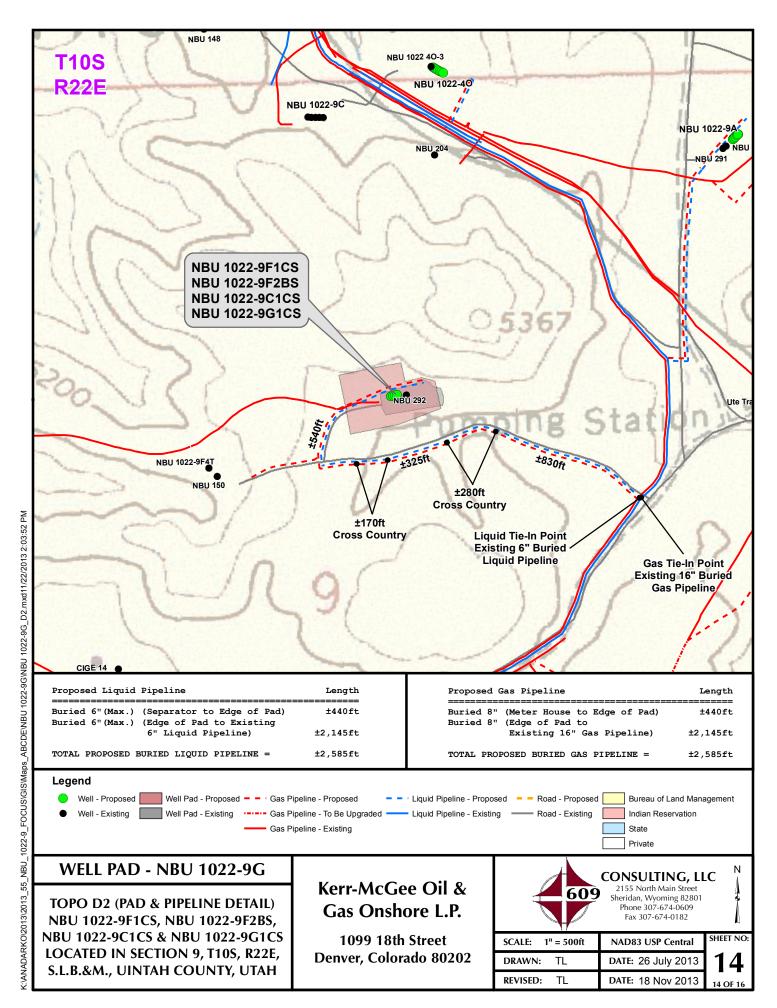
DATE PHOTOS TAKEN: 07-16-13	PHOTOS TAKEN BY: J.W.	SHEET NO:
DATE DRAWN: 07-18-13	DRAWN BY: J.G.C.	9

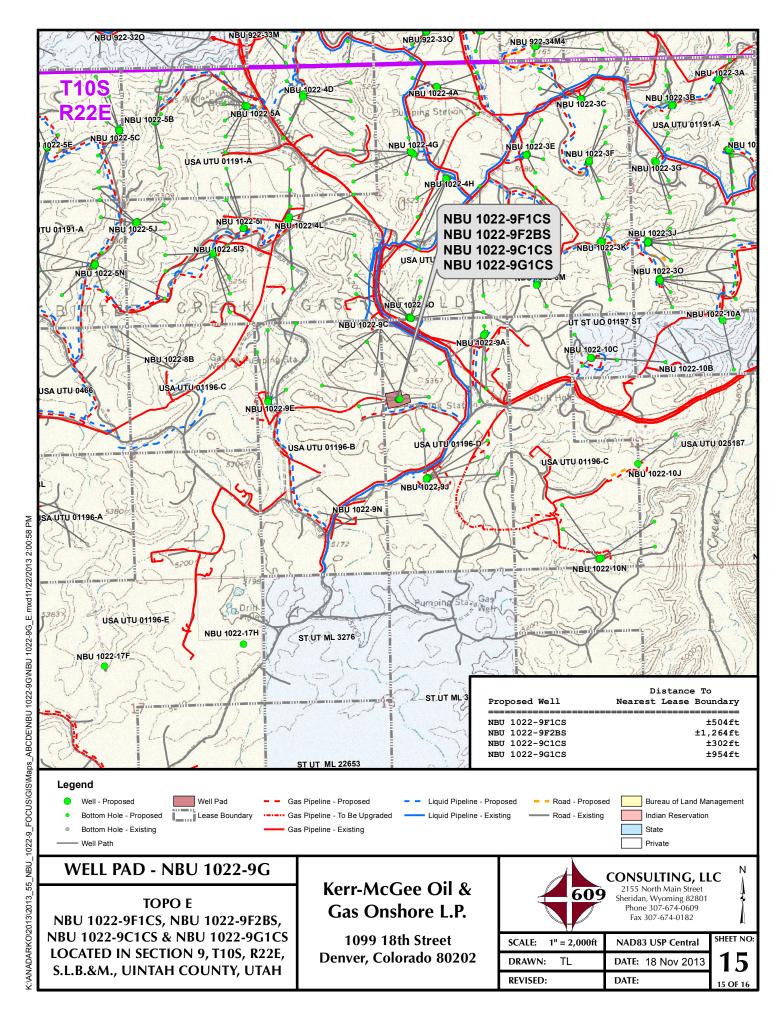












Kerr-McGee Oil & Gas Onshore, LP WELL PAD – NBU 1022-9G WELLS - NBU 1022-9F1CS, NBU 1022-9F2BS, NBU 1022-9C1CS & NBU 1022-9G1CS SECTION 9, T10S, R22E, S.L.B.&M. UINTAH COUNTY, UTAH

From the intersection of U.S. Highway 40 and 500 East street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45; exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 18.7 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.1 miles to a second Class D County Road to the southeast. Exit right and proceed in a southeasterly direction along the second Class D County Road approximately 5.9 miles to a third Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the third Class D County Road approximately 0.7 miles to a service road to the northwest. Exit left and proceed in a northwesterly then southwesterly direction along the service road approximately 0.3 miles to a second service road approximately 290 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 49.3 miles in a southerly direction.

SHEET 16 OF 16

API Well Number: 4304 Prodject: 80 TACHO UTM (feet), NAD27, Zone 12N

Scientific Drilling

-750

1500

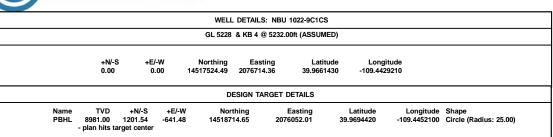
Vertical Section at 331.90° (1500 ft/in)

3000

Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY





Azimuths to True North Magnetic North: 10.80°

Magnetic Field Strength: 51978.2snT

Dip Angle: 65.77°

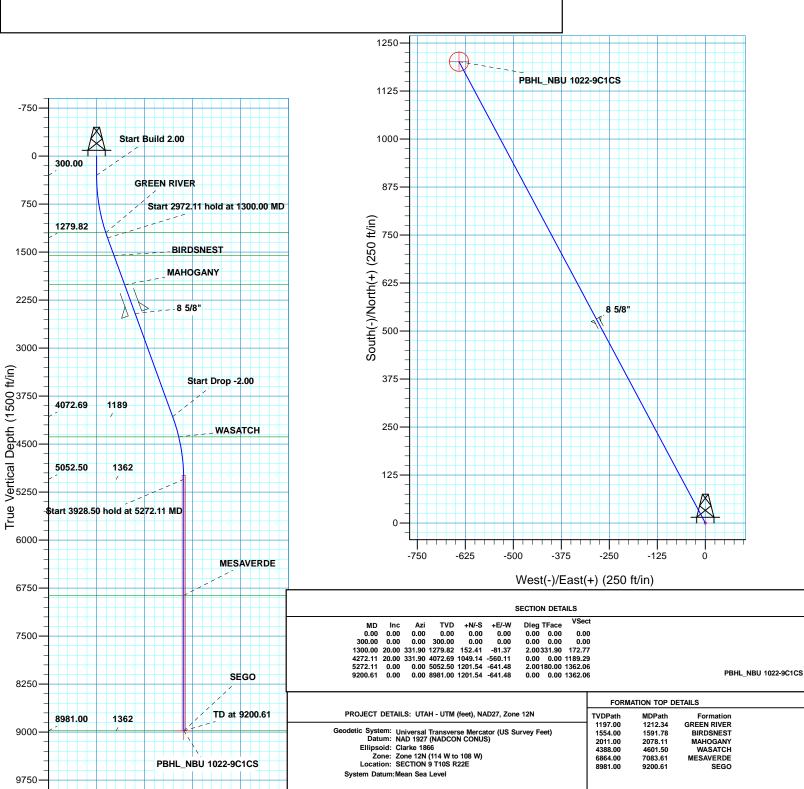
Date: 1/3/2014

Model: BGGM2013

Plan: PLAN #1 PRELIMINARY (NBU 1022-9C1CS/OH)

Created By: RobertScott Date: 12:22, January 06 2014

RECEI





US ROCKIES REGION PLANNING

UTAH - UTM (feet), NAD27, Zone 12N NBU 1022-9G PAD NBU 1022-9C1CS

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 January, 2014



RECEIVED: July 02, 2014



Planning Report



Denver Sales Database:

Company: US ROCKIES REGION PLANNING UTAH - UTM (feet), NAD27, Zone 12N

Project: Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: ОН

Geo Datum:

Map Zone:

PLAN #1 PRELIMINARY Design:

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well NBU 1022-9C1CS

GL 5228 & KB 4 @ 5232.00ft (ASSUMED) GL 5228 & KB 4 @ 5232.00ft (ASSUMED)

Minimum Curvature

Project UTAH - UTM (feet), NAD27, Zone 12N

Universal Transverse Mercator (US Survey Feet) Map System:

NAD 1927 (NADCON CONUS) Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

NBU 1022-9G PAD, SECTION 9 T10S R22E Site

Northing: 14,517,524.49 usft Site Position: Latitude: 39.9661430 From: Lat/Long Easting: 2,076,714.36 usft Longitude: -109.4429210 **Position Uncertainty:** 0.00 ft Slot Radius: **Grid Convergence:** 1.00 9 13.200 in

Well NBU 1022-9C1CS, 2309 FNL 1687 FWL

Well Position +N/-S 0.00 ft 14,517,524.49 usft Latitude: 39.9661430 Northing: +E/-W 0.00 ft Easting: 2,076,714.36 usft Longitude: -109.4429210

Position Uncertainty 0.00 ft Wellhead Elevation: 0.00 ft **Ground Level:** 5,228.00 ft

Wellbore ОН Magnetics **Model Name** Sample Date Declination **Dip Angle** Field Strength (nT) (°) (°) BGGM2013 1/3/2014 10.80 65.77 51,978

PLAN #1 PRELIMINARY Design **Audit Notes:** Version: Phase: PLAN Tie On Depth: 0.00 **Vertical Section:** Depth From (TVD) +N/-S +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 331.90

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	331.90	1,279.82	152.41	-81.37	2.00	2.00	0.00	331.90	
4,272.11	20.00	331.90	4,072.69	1,049.14	-560.11	0.00	0.00	0.00	0.00	
5,272.11	0.00	0.00	5,052.50	1,201.54	-641.48	2.00	-2.00	0.00	180.00	
9,200.61	0.00	0.00	8,981.00	1,201.54	-641.48	0.00	0.00	0.00	0.00 F	PBHL_NBU 1022-9C

RECEIVED: July 02, 2014



Planning Report



Database: Denver Sales

Company: US ROCKIES REGION PLANNING

Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 1022-9G PAD

 Well:
 NBU 1022-9C1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well NBU 1022-9C1CS

GL 5228 & KB 4 @ 5232.00ft (ASSUMED) GL 5228 & KB 4 @ 5232.00ft (ASSUMED)

True

Minimum Curvature

.9										
nned Surv	еу									
Meas Dep (fi	pth	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
•	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
3	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start	t Build 2.0	10								
	400.00	2.00	331.90	399.98	1.54	-0.82	1.75	2.00	2.00	0.00
						-0.02	1.73			
į	500.00	4.00	331.90	499.84	6.16	-3.29	6.98	2.00	2.00	0.00
6	600.00	6.00	331.90	599.45	13.84	-7.39	15.69	2.00	2.00	0.00
7	700.00	8.00	331.90	698.70	24.59	-13.13	27.88	2.00	2.00	0.00
8	800.00	10.00	331.90	797.47	38.39	-20.50	43.52	2.00	2.00	0.00
	900.00	12.00	331.90	895.62	55.22	-29.48	62.60	2.00	2.00	0.00
	000.00	14.00	331.90	993.06	75.07	-40.08	85.10	2.00	2.00	0.00
	100.00	16.00	331.90	1,089.64	97.90	-52.27	110.98	2.00	2.00	0.00
1,2	200.00	18.00	331.90	1,185.27	123.69	-66.04	140.21	2.00	2.00	0.00
1,2	212.34	18.25	331.90	1,197.00	127.08	-67.84	144.05	2.00	2.00	0.00
GRE	EN RIVER	2								
	300.00	20.00	331.90	1,279.82	152.41	-81.37	172.77	2.00	2.00	0.00
				1,273.02	102.71	-01.57	112.11	2.00	2.00	0.00
Start	t 2972.11 i	hold at 1300.00	MD							
1 4	400.00	20.00	331.90	1,373.78	182.58	-97.48	206.97	0.00	0.00	0.00
	500.00	20.00	331.90	1,467.75	212.75	-113.58	241.17	0.00	0.00	0.00
	591.78	20.00	331.90	1,554.00	240.44	-128.37	272.56	0.00	0.00	0.00
		20.00	331.90	1,554.00	240.44	-120.37	212.50	0.00	0.00	0.00
	DSNEST									
	600.00	20.00	331.90	1,561.72	242.92	-129.69	275.37	0.00	0.00	0.00
1,7	700.00	20.00	331.90	1,655.69	273.09	-145.80	309.58	0.00	0.00	0.00
1.9	800.00	20.00	331.90	1,749.66	303.26	-161.91	343.78	0.00	0.00	0.00
	900.00	20.00	331.90	1,843.63	333.44	-178.01	377.98	0.00	0.00	0.00
				1,937.60			412.18		0.00	
	000.00	20.00	331.90		363.61	-194.12		0.00		0.00
	078.11	20.00	331.90	2,011.00	387.17	-206.70	438.90	0.00	0.00	0.00
	IOGANY									
2,1	100.00	20.00	331.90	2,031.57	393.78	-210.23	446.38	0.00	0.00	0.00
2.5	200.00	20.00	331.90	2,125.54	423.95	-226.34	480.59	0.00	0.00	0.00
	300.00	20.00	331.90	2,219.51	454.12	-242.45	514.79	0.00	0.00	0.00
	400.00	20.00	331.90	2,313.48	484.29	-258.55	548.99	0.00	0.00	0.00
				2,407.45						
	500.00	20.00	331.90	,	514.46	-274.66	583.19	0.00	0.00	0.00
	556.99	20.00	331.90	2,461.00	531.66	-283.84	602.68	0.00	0.00	0.00
8 5/8	3"									
26	600.00	20.00	331.90	2,501.42	544.64	-290.77	617.39	0.00	0.00	0.00
	700.00	20.00	331.90	2,501.42	574.81	-306.88	651.60	0.00	0.00	0.00
	00.00	20.00	331.90	2,689.35	604.98	-322.99	685.80	0.00	0.00	0.00
	900.00	20.00	331.90	2,783.32	635.15	-339.09	720.00	0.00	0.00	0.00
3,0	00.00	20.00	331.90	2,877.29	665.32	-355.20	754.20	0.00	0.00	0.00
3 1	100.00	20.00	331.90	2,971.26	695.49	-371.31	788.40	0.00	0.00	0.00
	200.00	20.00	331.90	3,065.23	725.66	-387.42	822.61	0.00	0.00	0.00
	300.00	20.00	331.90	3,159.20	755.84	-403.53	856.81	0.00	0.00	0.00
	400.00	20.00	331.90	3,253.17	786.01	-419.63	891.01	0.00	0.00	0.00
	TUU.UU	20.00	331.90	3,347.14	816.18	-435.74	925.21	0.00	0.00	0.00
			331.80	0,041.14	010.10	-435.14	920.21	0.00	0.00	0.00
0,0	500.00	20.00								
		20.00	331.90	3,441.11	846.35	-451.85	959.41	0.00	0.00	0.00
3,6	500.00		331.90 331.90	3,441.11 3,535.08	846.35 876.52	-451.85 -467.96	959.41 993.62	0.00 0.00	0.00 0.00	0.00 0.00
3,6 3,7	500.00 600.00	20.00	331.90	,		-467.96	993.62			0.00
3,6 3,7 3,8	500.00 600.00 700.00 800.00	20.00 20.00 20.00	331.90 331.90	3,535.08 3,629.05	876.52 906.69	-467.96 -484.06	993.62 1,027.82	0.00 0.00	0.00 0.00	0.00 0.00
3,6 3,7 3,8 3,9	500.00 600.00 700.00 800.00 900.00	20.00 20.00 20.00 20.00	331.90 331.90 331.90	3,535.08 3,629.05 3,723.02	876.52 906.69 936.86	-467.96 -484.06 -500.17	993.62 1,027.82 1,062.02	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
3,6 3,7 3,8 3,9 4,0	500.00 600.00 700.00 800.00 900.00	20.00 20.00 20.00 20.00 20.00	331.90 331.90 331.90 331.90	3,535.08 3,629.05 3,723.02 3,816.99	876.52 906.69 936.86 967.04	-467.96 -484.06 -500.17 -516.28	993.62 1,027.82 1,062.02 1,096.22	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
3,6 3,7 3,6 3,9 4,0	500.00 600.00 700.00 800.00 900.00	20.00 20.00 20.00 20.00	331.90 331.90 331.90	3,535.08 3,629.05 3,723.02	876.52 906.69 936.86	-467.96 -484.06 -500.17	993.62 1,027.82 1,062.02	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00



Planning Report



Database: Denver Sales

Company: US ROCKIES REGION PLANNING

 Project:
 UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 1022-9G PAD

Well: NBU 1022-9C1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Well NBU 1022-9C1CS

GL 5228 & KB 4 @ 5232.00ft (ASSUMED) GL 5228 & KB 4 @ 5232.00ft (ASSUMED)

True

Minimum Curvature

lanned Survey										
Measure Depth	n Inclina		Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
(ft)	(°)		(°)	(ft)	(ft)	(ft)	(ft)	(/ loudsit)	(/ loousit)	(7100usit)
4,272		20.00	331.90	4,072.69	1,049.14	-560.11	1,189.29	0.00	0.00	0.00
	rop -2.00	10.11	201.00		4.057.44	504.54	4 400 70	2.22	0.00	2.22
4,300 4,400		19.44 17.44	331.90 331.90	4,098.94 4,193.80	1,057.44 1,085.34	-564.54 -579.44	1,198.70 1,230.33	2.00 2.00	-2.00 -2.00	0.00 0.00
4,500		15.44	331.90	4,289.70	1,110.31	-592.77	1,258.64	2.00	-2.00	0.00
4,600 4,60		13.44 13.41	331.90 331.90	4,386.54 4,388.00	1,132.31 1,132.62	-604.52 -604.68	1,283.58 1,283.93	2.00 2.00	-2.00 -2.00	0.00 0.00
WASA		10.41	001.00	4,000.00	1,102.02	004.00	1,200.00	2.00	2.00	0.00
4,700		11.44	331.90	4,484.19	1,151.32	-614.66	1,305.12	2.00	-2.00	0.00
4,800		9.44	331.90	4,582.52	1,167.30	-623.20	1,323.24	2.00	-2.00	0.00
4,900	0.00	7.44	331.90	4,681.44	1,180.25	-630.11	1,337.92	2.00	-2.00	0.00
5,000		5.44	331.90	4,780.80	1,190.15	-635.40	1,349.14	2.00	-2.00	0.00
5,100		3.44	331.90	4,880.49	1,196.98	-639.05	1,356.89	2.00	-2.00	0.00
5,200	0.00	1.44	331.90	4,980.40	1,200.74	-641.05	1,361.15	2.00	-2.00	0.00
5,272		0.00	0.00	5,052.50	1,201.54	-641.48	1,362.06	2.00	-2.00	0.00
Start 3	928.50 hold at	5272.11	MD							
5,300	0.00	0.00	0.00	5,080.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,400	0.00	0.00	0.00	5,180.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,500	0.00	0.00	0.00	5,280.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,600		0.00	0.00	5,380.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,700	0.00	0.00	0.00	5,480.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,800	0.00	0.00	0.00	5,580.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
5,900		0.00	0.00	5,680.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,000		0.00	0.00	5,780.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,100		0.00	0.00	5,880.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,200		0.00	0.00	5,980.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,300		0.00	0.00	6,080.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,400		0.00	0.00	6,180.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,500 6,600		0.00	0.00 0.00	6,280.39 6,380.39	1,201.54 1,201.54	-641.48 -641.48	1,362.06 1,362.06	0.00 0.00	0.00 0.00	0.00 0.00
6,700		0.00	0.00	6,480.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
6,800		0.00	0.00 0.00	6,580.39 6,680.39	1,201.54	-641.48	1,362.06	0.00 0.00	0.00 0.00	0.00
6,900 7,000		0.00	0.00	6,780.39	1,201.54 1,201.54	-641.48 -641.48	1,362.06 1,362.06	0.00	0.00	0.00 0.00
7,000		0.00	0.00	6,864.00	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
MESAV				-,	,		,			
7,100		0.00	0.00	6,880.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,200		0.00	0.00	6.980.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,200		0.00	0.00	7,080.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,400		0.00	0.00	7,180.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,500		0.00	0.00	7,280.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,600	0.00	0.00	0.00	7,380.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,700	0.00	0.00	0.00	7,480.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,800		0.00	0.00	7,580.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
7,900		0.00	0.00	7,680.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,000		0.00	0.00	7,780.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,100	0.00	0.00	0.00	7,880.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,200	0.00	0.00	0.00	7,980.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,300		0.00	0.00	8,080.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,400		0.00	0.00	8,180.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,500		0.00	0.00	8,280.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,600	0.00	0.00	0.00	8,380.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,700	0.00	0.00	0.00	8,480.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00



Planning Report



Database: Denver Sales

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 1022-9G PAD

 Well:
 NBU 1022-9C1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

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North Reference:

Survey Calculation Method:

Well NBU 1022-9C1CS

GL 5228 & KB 4 @ 5232.00ft (ASSUMED) GL 5228 & KB 4 @ 5232.00ft (ASSUMED)

True

Minimum Curvature

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,800.00	0.00	0.00	8,580.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
8,900.00	0.00	0.00	8,680.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
9,000.00	0.00	0.00	8,780.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
9,100.00	0.00	0.00	8,880.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
9,200.00	0.00	0.00	8,980.39	1,201.54	-641.48	1,362.06	0.00	0.00	0.00
9.200.61	0.00	0.00	8.981.00	1.201.54	-641.48	1.362.06	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1022-9C1C - plan hits target cent - Circle (radius 25.00	ter	0.00	8,981.00	1,201.54	-641.48	14,518,714.65	2,076,052.00	39.9694420	-109.4452100

Ca	sing Points							
		Measured	Vertical			Casing	Hole	
		Depth	Depth			Diameter	Diameter	
		(ft)	(ft)		Name	(in)	(in)	
		2,556.99	2,461.00	8 5/8"		8.625	11.000	

nations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,212.34	1,084.00	GREEN RIVER			
	1,591.78	1,441.00	BIRDSNEST			
	2,078.11	1,898.00	MAHOGANY			
	4,601.50	4,275.00	WASATCH			
	7,083.61	6,751.00	MESAVERDE			
	9,200.61	8,868.00	SEGO			

Plan Annotations				
Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	152.41	-81.37	Start 2972.11 hold at 1300.00 MD
4,272.11	4,072.69	1,049.14	-560.11	Start Drop -2.00
5,272.11	5,052.50	1,201.54	-641.48	Start 3928.50 hold at 5272.11 MD
9,200.61	8,981.00	1,201.54	-641.48	TD at 9200.61

NBU 1022-9C1CS/1022-9F1CS/1022-9F2BS/1022-9G1CS Kerr-McGee Oil Gas Onshore, L.P.

Surface Use Plan of Operations 1 of 5

Kerr-McGee Oil & Gas Onshore. L.P.

NBU 1022-9G PAD

<u>API #</u>	NBU 1022-9C1CS		
	Surface: 1687 FNL / 2309 FEL	SWNE	Lot
	BHL: 482 FNL / 2341 FWL	NENW	Lot
<u>API #</u>	NBU 1022-9F1CS		
	Surface: 1690 FNL / 2329 FEL	SWNE	Lot
	BHL: 1811 FNL / 2139 FWI	L SENW	Lot
<u>API #</u>	NBU 1022-9F2BS	<u></u>	
	Surface: 1688 FNL / 2319 FEL	SWNE	Lot
	BHL: 1369 FNL / 1379 FWI	L SENW	Lot
<u>API #</u>	NBU 1022-9G1CS	<u></u>	
	Surface: 1685 FNL / 2300 FEL	SWNE	Lot
	BHL: 1670 FNL / 1691 FEL	SWNE	Lot

This Surface Use Plan of Operations (SUPO) or 13-point plan provides site-specific information for the above-referenced wells.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

An on-site meeting was held on October 23, 2013. Present were:

- · Tyler Cox and Jessi Brunson BLM;
- · Mitch Batty Timberline Engineering & Land Surveying, Inc.; and
- Cara Mahler, Kenny Warren, Casey McKee, Chantill Recker, Doreen Green, and, Howdy Brown - Kerr-McGee

A. Existing Roads:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Topo B for existing roads.

B. New or Reconstructed Access Roads:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

No new access road is proposed

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C. Location of Existing Wells:

Kerr-McGee Oil Gas Onshore, L.P.

Please refer to Topo C for exiting wells.

D. Location of Existing and/or Proposed Facilities:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

This pad will expand the existing pad for the NBU 292, which is a producing gas well according to Utah Division of Oil, Gas and Mining (UDOGM) records on January 9, 2014. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

GAS GATHERING

Please refer to Exhibit A and Topo D2- Pad and Pipeline Detail.

The total gas gathering pipeline distance from the meter to the tie in point is ± 2585 ' and the individual segments are broken up as follows:

The following segments are "onlease", no ROW needed.

- ±440' (0.08 miles) Section 9 T10S R22E (SE/4 NW/4) On-lease UTU01196-D, BLM surface, New 8" buried gas gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2 Pad and Pipeline Detail.
- ±2145' (0.4 miles) Section 9 T10S R22E (SE/4 NW/4) On-lease UTU01196-D, BLM surface, New 8" buried gas gathering pipeline from the edge of the pad traversing southwesterly then easterly to an existing 16" gas pipeline. Please refer to Topo D2 Pad and Pipeline Detail and Exhibit A Line No. 3, 4, 5, 6 & 7.

LIQUID GATHERING

Please refer to Exhibit B and Topo D2- Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the tie in point is ± 2585 ' and the individual segments are broken up as follows:

The following segments are "onlease", no ROW needed.

- ±440' (0.08 miles) Section 9 T10S R22E (SE/4 NW/4) On-lease UTU01196-D, BLM surface, New 6" buried liquid gathering pipeline from the separator to the edge of the pad. Please refer to Topo D2 Pad and Pipeline Detail.
- ±2145' (0.4 miles) Section 9 T10S R22E (SE/4 NW/4) On-lease UTU01196-D, BLM surface, New 6" buried liquid gathering pipeline from the edge of the pad traversing southwesterly then easterly to an existing 6" liquid pipeline. Please refer to Topo D2 Pad and Pipeline Detail and Exhibit B Line No. 3, 4, 5, 6 & 7.

Pipeline Gathering Construction

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Surface Use Plan of Operations 3 of 5

The Anadarko Completions Transportation System (ACTS) information:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Please refer to Exhibit C for ACTS Lines

E. Location and Types of Water Supply:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Water will be hauled to location over the roads marked on Maps A and B.

F. Construction Materials:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

G. Methods for Handling Waste:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Materials Management

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

H. Ancillary Facilities:

No additional ancillary facilities are planned for this location.

I. Well Site Layout:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

J. Plans for Surface Reclamation:

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Interim Reclamation

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Final Reclamation

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Measures Common to Interim and Final Reclamation

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

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NBU 1022-9C1CS/1022-9F1CS/1022-9F2BS/1022-9G1CS

Kerr-McGee Oil Gas Onshore, L.P.

Surface Use Plan of Operations 4 of 5

Weed Control

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Monitoring

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

K. Surface/Mineral Ownership:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 (435)781-4400

L. Other Information:

Cultural and Paleontological Resources

Please refer to the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

Resource Reports:

A Class I literature survey was completed on August 7, 2013 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 13-208.

A paleontological reconnaissance survey was completed on July 23, 2013 by SWCA Environmental Consultants. For additional details please refer to report UT13-14314-136.

Biological field survey was completed on July 27, 2013 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-909.

Proposed Action Annual Emissions Tables:

Please refer to the Appendix in the Standard Operating Practices on file at the BLM Vernal Field Office dated October 31, 2012.

M. Lessee's or Operators' Representative & Certification:

Joel Malefyt Regulatory Analyst II Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6828 Tommy Thompson General Manager, Drilling Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6724

NBU 1022-9C1CS/1022-9F1CS/1022-9F2BS/1022-9G1CS Kerr-McGee Oil Gas Onshore, L.P.

Surface Use Plan of Operations 5 of 5

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Joel Malefyt

January 15, 2014

Date

Kerr-McGee Oil & Gas Onshore L.P., wholly owned subsidiary of Anadarko Petroleum Corporation, Standard Operating Practice Agreement for the Greater Natural Buttes Field

Drilling Program

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations, Onshore Oil and Gas Orders, and the approved plan of operation. As Operator, KMG is fully responsible for actions of subcontractors. A copy of these Standard Operating Practices will be furnished to the field representatives to insure compliance.

Bureau of Land Management Notification Requirements:

Location Constructions: At least 48 hours prior to construction of location and access roads including notification, if applicable, to other surface management agencies, such as Ute Tribe Energy and Mineral Department, State of Utah, or private surface owner(s).

Location Completion: Prior to moving on the drilling rig

Spud Notice: At least 24 hours prior to spudding the well.

Casing String and Cementing: At least 24 hours prior to running casing and cementing all casing.

Blow Out Preventer & Related Equipment Tests: At least 24 hours prior to initiating pressure tests.

First Production Notice: Within 5 days after a new well begins production; or, within 5 days of when production resumes after a well has been off production for more than 90 days.

Details of the on-site inspection, including date, time, weather conditions, and individuals present, will be submitted with the site-specific Application for Permit to Drill (APD).

1. Estimated Tops of Important Geologic Markers:

Formation and depths will be submitted with site-specific APDs.

2. Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

Formation and depths will be submitted with site-specific APDs.

3. Pressure Control Equipment:

Pressure Control Equipment Schematic is attached as appendix F. Any variance will be included in the site-specific APDs.

4. Proposed Casing & Cementing Program:

Proposed casing and cementing will be submitted with site-specific APDs.

5. Drilling Fluids Program:

Proposed drilling fluids will be submitted with site-specific APDs.

6. Evaluation Program:

Evaluation program will be submitted with site-specific APDs.

7. Abnormal Conditions:

Any abnormal condition will be submitted with site specific APDs.

8. Anticipated Starting Dates:

Drilling is planned to commence within the administrative period of an approved application.

9. Variances:

KMG respectfully requests a variance to several requirements associated with air drilling outlined in OSO 2:

Variance for air drilling

Air rig is only used by KMG to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig and is used to drill and construct the majority of the wellbore.

KMG typically utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 3,200 MD. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig

also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill an 11inch hole to just above the Bird's Nest Interval. with an air hammer. The hammer is then tripped and replaced with an 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

Variance for Mud Material Requirements

OSO 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump, which is located near the reserve pit, will supply the water to the well bore.

Variance for Special Drilling Operation (surface equipment placement)

OSO 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and

boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, OSO 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

Variance for FIT Requirements

KMG also respectfully requests a variance to OSO 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). These wells are not exploratory wells and are being drilled in an area where the formation integrity is well known.

10. Other Information:

Drilling Program will be submitted with site-specific APDs.

SURFACE USE PROGRAM

A. Existing Roads:

Existing roads consist of county and improved/unimproved access roads (two-tracks). In accordance with OSO 1, KMG will improve or maintain existing roads in a condition that is the same as or better than before operations began. New or reconstructed proposed access roads are discussed in Section B.

The existing roads will be maintained in a safe and usable condition. Maintenance for existing roads will continue until final abandonment and reclamation of well pads and/or other facilities, as applicable. Road maintenance will include, but is not limited to, blading, ditching, and/or culvert installation and cleanout. To ensure safe operating conditions, gravel surfacing may be performed where excessive rutting or erosion may occur. Dust control may be performed as necessary to ensure safe operating conditions.

Roads, gathering lines and electrical distribution lines may occupy common disturbance corridors where possible. Where available, roadways may be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor may overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Within individual APDs, please refer to Topo B, for existing roads.

B. New or Reconstructed Access Roads:

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007). The BLM Manual Section 9113 (1985) will be considered in consultation with the BLM in the design, construction, improvement and maintenance of all new or reconstructed roads. If a new road would cross a water of the United States, KMG will adhere to all applicable US Army Corps of Engineers requirements in cooperation with the Utah Division of Water Rights.

New well pads or pad expansions may require construction of a new access road and/or decommissioning of an older road. Plans, routes, and distances for new roads and road improvements are provided in design packages, exhibits and maps for a project. Project-specific maps are submitted to depict the locations of existing, proposed, and/or decommissioned and include the locations for supporting structures, including, but not limited to, culverts, bridges, low water crossings, range infrastructure, and haul routes, per OSO 1. Designs for cuts and fills, including spoils source and storage areas, are provided with the road designs, as necessary.

Where safety objectives can be met KMG may use unimproved and/or two-track roads for lease operations and to lessen total disturbance. Road designs will be based on the road safety requirements, traffic characteristics, environmental conditions, and the vehicles the road is intended to carry. Generally, newly constructed unpaved lease roads will be crowned and ditched with the running surfaces of the roads approximately 12-18 feet wide and a total road corridor width not to exceed 45 feet, except where noted in the road design for a specific project. Maximum grade will generally not exceed 8%. Borrow ditches will be back sloped 3:1 or less. Construction BMPs will be employed to control onsite and offsite erosion.

Where topography would direct storm water runoff to an access road or well pad, drainage ditches or other common drainage control facilities may be constructed to divert surface water runoff. Drainage features, including culverts, may be constructed or installed prior to commencing other operations, including drilling for facilities placement. Riprap will be placed at the inlet and outlet at the culvert(s). Drainage features will meet the standards of the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007).

Prior to construction, new access road(s) will be staked according to the requirements of OSO 1. Construction activities will not be conducted using frozen or saturated materials or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur. Vegetative debris will not be placed in or under fill embankments.

New road maintenance will include, but is not limited to, blading, ditching, culvert installation and cleanout, gravel surfacing where excessive rutting or erosion may occur and dust control, as necessary to ensure safe operating conditions. All vehicular traffic, personnel movement and construction/restoration operations will be confined to the approved area and to existing roadways and/or access routes.

Snow removal will be conducted on an as-needed basis to accommodate safe travel. Snow removal will occur as necessary throughout the year, as will necessary drainage ditch construction. Removed snow may be stored on permitted well pads to reduce hauling distances and/or at the aerial extent of approved disturbance boundaries to facilitate snow removal for the remainder of the season.

If a county road crossing or encroachment permit is needed, it will be obtained prior to construction.

For individual APDs, refer to Topo B.

C. Location of Existing Wells:

For individual APDs, refer to Topo C

D. Location of Existing and/or Proposed Facilities:

The following will apply if the well is productive: Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (KMG). Should the well(s) prove productive, production facilities will be installed on the disturbed portion of each well pad.

A berm may be constructed completely around production components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed to hold the capacity of the largest tank and have sufficient freeboard to accommodate a 25 year rainfall event. This includes pumping units. Aboveground structures constructed or installed onsite for 6 months or longer, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with the BLM (typically Shadow Gray). A production facility layout is provided as part of a project- specific APD, ROW or NOS submission.

Gas Gathering

The gas gathering pipeline is made of steel line pipe, surface is bare pipe and buried is of coated with fusion bonded epoxy coating (or equivalent). The individual segments will be denoted in site-specific APDs.

Liquid Gathering

The individual segments will be denoted in site-specific APDs.

Pipeline Gathering Construction

Gas gathering pipeline(s,) gas lift, or liquids pipelines may be constructed to lie on the surface or be buried. The road and/or well pad may be utilized for construction activities and staging when the pipeline is adjacent to the road or well pad. The area of disturbance during construction from

the edge of road or well pad and for surface and buried pipelines including cross country will typically be 45' temporary disturbance. In addition, KMG requests a permanent 30'disturbance width that will be maintained for the portion adjacent to the road as well as cross country lines. The need for the 30' of permanent disturbance width is for maintenance and repairs.

Above-ground installation will generally not require clearing of vegetation or blading of the surface, except where safety considerations necessitate earthwork. If installation cannot occur on the exact location, pipe may be constructed parallel and adjacent to a road and lifted from the road to the pipeline route. In other cases where a pipeline route is not parallel and adjacent to a road (cross-country between sites), it will be welded/fused in place at a well pad, access road, or designated work area and pulled between connection locations with a suitable piece of equipment. Buried pipelines will generally be installed parallel and adjacent to existing and/or newly constructed roads and within the permitted disturbance corridor. Buried pipelines may vary from 2" (typically fuel gas lines) to 24" (typically transportation lines) in diameter, but 6" to 16 "is typical for a buried gas line. The diameter of liquids pipelines may vary from 2" to 12", but 6"is the typical diameter. Gas lift lines may vary from 2" to 12" diameter, but 6" diameter pipes are generally used for gas lift. If two or more pipelines are present (gas gathering, gas lift, and fluids), they will share a common trench where possible.

When installing a buried pipeline, typically topsoil will be removed, windrowed and placed on the non-working side of the route for later reclamation. Because working room is limited, the spoil may be spread out across the working side and construction will take place on the spoil. The working side of the corridor will be used for pipe stringing, bending, welding and equipment travel. Small areas on the working side displaying ruts or uneven ground will be groomed to facilitate the safe passage of equipment. After the pipelines are installed, spoil will be placed back into the trench, and the topsoil will be redistributed over the disturbed corridor prior to final reclamation. Typical depth of the trench will be 6', but depths may vary according to site-specific conditions (presence of bedrock, etc.). The proposed trench width for the pipeline would range from 18"-48".

The pipeline will be welded along the proposed route and lowered into place. Trenching equipment will cut through the soil or into the bedrock and create good backfill, eliminating the need to remove large rocks. The proposed buried pipeline will be visually and radio-graphically inspected and the entire pipeline will be pneumatically or hydrostatically tested before being placed into service. Routine vehicle traffic will be prevented from using pipeline routes as travel ways by posting signs at the route's intersection with an access road.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, KMG will apply all applicable Army Corps mandates as

well as the BLM's Hydraulic Considerations for pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface.

Pipeline signs will be installed along the route to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves and lateral T's will be installed at various locations for production integrity and safety purposes.

Upon completion of the proposed buried pipeline, the entire area of disturbance will be reclaimed to the standards proposed in the Green River District Reclamation Guidelines. Please refer to section J for more details regarding final reclamation.

When no longer deemed necessary by the operator, KMG or its successor will consult with the BLM, Vernal Field Office before terminating of the use of the pipeline(s).

The Anadarko Completions Transportation System (ACTS) information:

For individual APDs, refer to Exhibit C for the proposed placement of the ACTS temporary lines.

KMG will use either a closed loop drilling system that will require one pit and one storage area to be constructed on the drilling pad or a traditional drilling operation with one pit. The storage area will be used to contain only the de-watered drill cuttings and will be lined and reclaimed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion pit is lined and will be used for the wells drilled on the pad or used as part of our ACTS system which is discussed in more detail below. Using the closed loop drilling system will allow KMG to decrease the amount of disturbance/footprint on location compared to a single large drilling/completion pit.

If KMG does not use a closed loop system, it will construct a drilling reserve pit to contain drill cuttings and for use in completion operations. Depending on the location of the pit, its relation to future drilling locations, the reserve/completion pit may be utilized for the completion of the wells on that pad and/or be used as part of our ACTS system. KMG will use ACTS to optimize the completion processes for multiple pads across the project area which may include up to a section of development. ACTS will facilitate management of completion fluids by utilizing existing reserve pits, or newly constructed completion pits, as well as temporary, surface-laid aluminum liquids transfer lines between pad locations. The pit will be refurbished as follows when a traditional drill pit is used, including mix and pile up drill cuttings with dry dirt, bury the original liner in the pit, walk bottom of pit with cat. KMG will reline the pit with a 30 mil liner and double felt padding. The refurbished or newly constructed pit will be the same size or

smaller as specified in the originally approved ROW/APD. The pit refurbish will be done in a normal procedure and there will be no modification to the pit. All four sides of the completions pit will be fenced in according to standard pit fencing procedures. Netting will be installed over all pits.

Any hydrocarbons collected will be treated and sold at approved sales facilities. A loading/ <u>unloading</u> rack <u>with drip containment</u> will also be installed where water trucks would unload and load to prevent damage caused from pulling hoses in and out of the pit.

ACTS will require temporarily laying multiple 6 inch aluminum water transfer lines on the surface between either existing or refurbished reserve pits. The temporary aluminum transfer lines will be utilized to transport completion fluid being injected and/or recovered during the completion process and will be laid adjacent to existing access roads or pipeline corridors. Upon conclusion of the completion operation, the liquids transfer lines will be flushed with fresh water and purged with compressed air. The contents of the transfer lines will be flushed into a water truck for delivery to another ACTS location or a reserve pit.

The volume of frac fluid transported through a water transfer line will vary, but volume is projected to be approximately 1.75 bbls per 50-foot joint. Although the maximum working pressure is 125 psig, the liquids transfer lines will be operated at a pressure of approximately 30 to 40 psig. KMG will keep the netted pit open for one year from first production of the first produced well on the pad. During this time the surrounding well location completion fluids may be recycled in this pit and utilized for other completion jobs in the area. After one year KMG will backfill the pit and reclaim. If the pit is not needed for an entire year it will be backfilled and reclaimed earlier. KMG understands that due to the temporary nature of this system, BLM considers this a casual use situation; therefore, no permanent ROW or temporary use plan will need to be issued by the BLM.

E. Location and Types of Water Supply:

Water for drilling and completion operations will be obtained from the following sources: JD Field Services:

Green River: 1087' FSL & 1020' FEL, Sec. 15 – T2N – R22E

RN Industries:

High Pressure: 705' FNL & 675' FWL, Sec. 1 – T6S – R22E

1057' FNL & 390' FWL, Sec. 1 – T6S – R22E 1239' FNL & 52' FEL, Sec. 6 – T6S – R23E

White River: 501' FNL & 1676' FEL, Sec. 9 – T8S – R20E

471' FNL & 1676' FEL, Sec. 9 – T8S – R20E 900' FNL & 550' FEL, Sec. 35 – T9S – R22E 200' FNL & 950' FEL, Sec. 2 – T10S – R22E 275' FSL & 2275' FEL, Sec. 2 – T10S – R22E 122' FSL & 1350' FEL, Sec. 11 – T10S – R22E 1670' FSL & 500' FEL, Sec. 12 – T10S – R22E 959' FNL & 705' FEL, Sec. 13 – T10S – R22E

600' FSL & 900' FEL, Sec. 13 – T10S – R22E

Water Plant: 481' FNL & 2176' FEL, Sec. 9 – T8S – R20E

471' FNL & 2176' FEL, Sec. 9 – T8S – R20E

Frog Pond: 4820' FNL & 1200' FWL, Sec. 33 – T8S – R20E

4850' FNL & 700' FWL, Sec. 33 – T8S – R20E

Blue Tanks: 200' FNL & 405' FEL, Sec. 32 – T4S – R3E

Buggsy's Water Source:

Green River: N 2090' & W 30' from E1/4 corner of Sec. 33 – T8S – R20E

Underground Water Well: N 1850' & W 425' from E1/4 corner of Sec. 33 – T8S – R20E

Water will be hauled to location over the roads marked in the individual APD's Maps A and B.

F. Construction Materials:

Construction operations will typically be completed with native materials found on location. Construction materials imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source (described in site-specific documents). No construction materials will be removed from Federal lands without notifying the BLM. A proposed source location other than an on-location construction site will be designated either via a map or narrative within the project specific materials provided to the BLM.

G. Methods for Handling Waste:

All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. KMG maintains a Spill Control and Countermeasure Plan for each applicable location, which includes notification requirements, to the BLM and other appropriate agencies, for all reportable spills of oil, produced liquids, and hazardous materials.

Any accidental release, such as a leak or spill in excess of the reportable quantity, as established by 40 CFR Part 117.3, will be reported as per the requirements of Comprehensive Environmental Response, Compensation, and Liability Act, Section 102 B. If a release involves petroleum hydrocarbons or produced liquids, KMG will comply with the notification requirements of NTL-3A.

Drill cuttings and/or drilling fluids may be contained in a reserve/completion pit whether a closed loop system is or isn't utilized and cuttings may be buried in the pit(s) upon closure. Unless specifically approved by the BLM, no oil or other oil-based drilling additives,

chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

If utilizing a closed loop system, drill cuttings and/or drilling fluids may be stored in above ground containers while on the location. All used drilling fluids may be hauled to Anadarko Petroleum Corporation's Mud Plant where it may be recycled for use at future well locations, hauled to a permitted disposal facility, or solidified for incorporation into the pad during interim reclamation practices. Drill cuttings from a closed loop system may be either hauled to an approved Utah Department of Oil, Gas and Mining Commercial Landfarm Disposal Facility or incorporated into the pad location during interim reclamation.

Pits will be constructed to eliminate the accumulation of surface precipitation runoff into the pit (via appropriate placement of subsoil storage areas and/or construction of berms, ditches, etc). Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling, completions or well testing, liquid petroleum hydrocarbons will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Netting will be placed over pits before any liquids are discharged into pit. Should hydrocarbons be released into a reserve/completion pit, they will be removed as soon as practical and before the netting is removed from the pit. Similarly, hydrocarbon removal will take place prior to the closure of the pit, unless authorization is provided for disposal via alternate pit closure methods (e.g. solidification).

The reserve and/or completion pit will be lined with a synthetic material 30 mil or thicker liner. The bottom and side walls of the pit will be void of any sharp rocks that could puncture the liner. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. After evaporation and when dry, the reserve pit liners will be cut off, ripped and/or folded back (as safety considerations allow) as near to the mud surface as possible and buried on location or hauled to a landfill prior to backfilling the pit with a minimum of five feet of soil material.

Where necessary and if conditions allow, produced liquids from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per OSO 7. Subsequently, permanent approved produced water disposal methods will be employed in accordance with OSO 7 and/or as described in a Water Management Plan (WMP). Revisions to the water source or method of transportation will be subject to written approval from the BLM.

Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after one year from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and

the pit reclaimed. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility. Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash receptacles will be collected and removed from the well location.

For the protection of livestock and wildlife, all open pits (excluding flare pits) will be fenced or netted to prevent wildlife or livestock entry.

Maximum distance between fence posts shall be no greater than 16 feet. Siphons, catchments, and absorbent pads will be installed to keep hydrocarbons produced by the drilling rig or other equipment on location from entering the reserve pit. Hydrocarbons, contaminated pads, and/or soils will be disposed of in accordance with state and federal requirements.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

Materials Management

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the CERCLA of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Hazardous materials may be contained in some grease or lubricants, solvents, acids, paint, and herbicides, among others as defined above. KMG maintains a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used during the course of construction, drilling, completion, and production operations for this project. The transport, use, storage and handling of hazardous materials will follow procedures specified by federal and state regulations. Transportation of hazardous materials to the well location is regulated by the Department of Transportation (DOT) under 49 CFR, Parts 171-180. DOT regulations pertain to the packing, container handling, labeling, vehicle placarding, and other safety aspects.

Potentially hazardous materials used in the development or operation of wells will be kept in limited quantities on well sites and at the production facilities for short periods of time.

Chemicals meeting the criteria for being an acutely hazardous material/substance or meet the quantities criteria per BLM Instruction Memorandum No. 93-344 will not be used. Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities (crude oil/condensate, produced water). They may also be kept in limited quantities on drilling sites (barite, diesel fuel, cement, cottonseed hulls etc.) for short periods of time during drilling or completion activities.

Any produced water separated from recoverable condensate during well operations will be contained in a water tank and will then be transported by pipeline and/or truck to one of the preapproved disposal sites:

RNI in Sec. 5 T9S R22E NBU #159 in Sec. 35 T9S R21E Ace Oilfield in Sec. 2 T6S R20E MC&MC in Sec. 12 T6S R19E Pipeline Facility in Sec. 36 T9S R20E

Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E

Bonanza Evaporation Pond in Sec. 2 T10S R23E

Or to one of the following KMG active Salt Water Disposal (SWD) wells:

NBU 159 SWD in Sec. 35 T9S R21E CIGE 112D SWD in Sec. 19 T9S R21E CIGE 114 SWD in Sec. 34 T9S R21E NBU 921-34K SWD in Sec. 34 T9S R21E NBU 921-33F SWD in Sec. 34 T9S R21E

H. Ancillary Facilities:

If additional ancillary facilities are planned they will be depicted on site specific APDs.

I. Well Site Layout:

The location, orientation and aerial extent of each drill pad, reserve/completion/flare pit (for closed loop or non-closed loop operations), access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure, proposed cuts and fills, and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable.

Site-specific conditions may require slight deviation in actual equipment depending on whether a closed loop system is used. Surface distance may be less if using closed loop. But in either case, the area of disturbance will not exceed the maximum disturbance outlined in the attached exhibits of the APDs.

Each well will utilize either a centralized tank battery, centralized fluids management system, or have tanks installed on its pad. Production/Produced Liquid tanks will be constructed,

maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons. The tanks are not to be used for disposal of liquids from additional sources without prior approval of BLM.

J. Plans for Surface Reclamation:

The surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. Interim reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils material, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

Interim Reclamation

Interim reclamation may include pit evaporation, fluid removal, pit solidification, re-contouring, incorporation of cuttings, ripping, spreading top soil, seeding, and/or weed control. Interim reclamation will be performed in accordance with OSO 1, or written notification will be provided to the BLM for approval. Where feasible, drilling locations, reserve pits, or access routes not utilized for production operations will be re-contoured to a natural appearance.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. Stockpiled drill cuttings may also be incorporated into the spoils, recontoured, and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit. Disposal of pit fluids and linings is discussed in Section G.

Final Reclamation

Final reclamation will be performed for unproductive wells and after the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. The BLM will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as close as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring the site and prior to replacing topsoil, final grading and site preparation will be conducted over the entire surface of the well site and access road. The area will be ripped to a depth no greater than 6 inches on 18 to 24-inch centers and the surface soil material will be uniformly pitted with longitudinal depressions perpendicular to the natural flow of water where practical. Following site preparation, topsoil will be spread on the location and prepared for seeding.

Reclamation of roads will be performed at the discretion of the BLM. All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 6 to 24 inches where practical, recontoured to approximate the original contour of the ground and seeded in accordance with the seeding specifications of the BLM.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to the BLM.

Measures Common to Interim and Final Reclamation

Soil tillage will be conducted using a disk in areas needing additional seedbed preparation following site preparation. This will provide primary soil tillage to a depth no greater than 6 inches. Prior to reseeding, compacted areas will be scarified by ripping or chiseling to loosen compacted soils, promote water infiltration, and improve soil aeration and root penetration.

Seeding will occur during optimal soil conditions and will typically be accomplished through the use of a no-till rangeland style seed drill with a "picker box." Additionally an imprinter seeder may be used. An imprinter seeder creates divots to roughen the surface and collect moisture to aid in seed germination. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for revegetation. The seed mixes will be selected from a list provided by or approved by the BLM, or a specific seed mix will be proposed by KMG to the BLM and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be

maintained by KMG. Every effort will be made to obtain "cheat grass free seed" and noxious weed free seed.

Seed Mix to be used for Well Site, Access Road, and Pipeline (as applicable):

Bonanza Area Mix	Pure Live Seed lbs/acre
Crested Wheat (Hycrest)	1.5
Bottlebrush Squirreltail	1
Western Wheatgrass (Arriba)	1
Thick Spike Wheatgrass	1.5
Indian Ricegrass	1
Fourwing Saltbush	2
Shadscale	2
Forage Kochia	0.25
Rocky Mountain Bee Plant	0.5
Total	10.75

Natural Buttes Area Mix Option 1:	Pure Live Seed lbs/acro	
Indian Ricegrass (Nezpar)	3	
Thick Spike Wheatgrass	2	
Sandberg bluegrass	0.5	
Bottlebrush squirreltail	1	
Crested wheatgrass (Hycrest)	1	
Winterfat	0.25	
Shadscale	1.5	
Four-wing saltbush	0.75	
Forage Kochia	0.25	
Total	10.25	

Natural Buttes Area Mix Option 2: Pure Live Seed lbs/acre

Galleta Grass	0.5
Great Basin Wildrye	0.5
Thickspike Wheatgrass	2.5
Indian Ricegrass (Nezpar)	1
Crested Wheatgrass	1
Siberian Wheatgrass	1
Bottlebrush Squirreltail	1
Munro Globemallow	0.1
Palmer Penstemon	0.1
Rocky Mtn beeplant	0.5
Western yarrow	0.1
Shadscale	0.5
Forage Kochia	0.5
T. 4.1	0.2

Total 9.3

Natural Buttes Area Mix Option 3:	Pure Live Seed lbs/acro	
Galleta Grass	2	
Sandberg bluegrass	0.5	
Shadscale	0.5	
Bluebunch (secar)	2	
Indian Ricegrass (Nezpar)	2	
Western Wheatgrass (Arriba)	2	
Palmer penstemon	0.25	
Munro Globemallow	0.15	
Black Sage	0.25	
Winterfat	0.25	
Forage Kochia	0.25	
Total	10.15	

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage. Soil amendments such as "Sustain" (an organic fertilizer that will be applied at the rate 1,800 – 2,100 lbs/acre with seed) may also be dry broadcast or applied with hydro-seeding equipment.

Weed Control

All weed management will be done in accordance with the Vernal BLM Surface Disturbance Weed Policy. Noxious weeds will be controlled, as applicable, on project areas. Monitoring and management of noxious and/or invasive weeds of concern will be completed annually until the project is deemed successfully reclaimed by the surface management agency and/or owner according to the Anadarko Integrated Weed Management Plan. Noxious weed infestations will be mapped using a GPS unit and submitted to the BLM with information required in the Vernal BLM Surface Disturbance Weed Policy. If herbicide is to be applied it will be done according to an approved Pesticide Use Proposal (PUP), inclusive of applicable locations. All pesticide applications will be recorded using a Pesticide Application Record (PAR) and will be submitted along with a Pesticide Use Report (PUR) annually prior to Dec. 31.

Monitoring

Monitoring of reclaimed project areas will be completed annually during the growing season and actions to ensure reclamation success will be taken as needed. During the first two growing seasons an ocular methodology will be used to determine the success of the reclamation activities. During the 3rd growing season a 100 point line intercept (quantitative) methodology will be used to obtain basal cover. The goal is to have the reclaimed area reach 30% basal cover when compared to the reference site. If after three growing seasons the area has not reached 30% basal cover, additional reclamation activities may be necessary. Monitoring will continue until the reclaimed area reaches 75% basal cover of desirable vegetation when compared to the reference site. (Green River District Reclamation Guidelines).

All monitoring reports will be submitted electronically to the Vernal BLM in the form of a geodatabase no later than March 1st of the calendar year following the data collection.

K. Surface/Mineral Ownership:

Depicted on site specific APDs.

L. Other Information:

Cultural and Paleontological Resources

All personnel are strictly prohibited from collecting artifacts, any paleontological specimens or fossils, and from disturbing any significant cultural resources in the area. If artifacts, fossils, or any culturally sensitive materials are exposed or identified in the area of construction, all construction operations that would affect the newly discovered resource will cease, and KMG will provide immediate notification to the BLM or appropriate SMA.

Resource Reports

Appropriate archaeological and paleontological reconnaissance surveys and biological field surveys will be completed and provide to the BLM for individual APDs.

Proposed Action Annual Emissions Tables:

Appendix A through G contains the emission table per pad based on well count.

M. Lessee's or Operators' Representative & Certification:

Depicted on site specific APDs.

Appendix A:

Proposed Action Annual Emissions Tables: 4 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹			
Pollutant	Development	Production	Total
NOx	3.8	1.2	5
CO	2.2	1.08	3.28
VOC	0.1	6.8	6.9
SO ₂	0.005	0.01	0.02
PM ₁₀	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5	16,547	0.03%
VOC	6.9	127,495	0.01%

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Appendix B:

Proposed Action Annual Emissions Tables: 5 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹			
Pollutant	Development	Production	Total
NOx	3.8	1.5	5.3
CO	2.2	1.08	3.28
VOC	0.1	8.5	8.6
SO_2	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison

Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr)	Percentage of Proposed Action to WRAP Phase III
NOx	5.3	16,547	0.03%
VOC	8.6	127,495	0.01%

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Appendix C:

Proposed Action Annual Emissions Tables: 6 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹			
Pollutant	Development	Production	Total
NOx	3.8	1.8	5.6
CO	2.2	1.08	3.28
VOC	0.1	10.2	10.3
SO ₂	0.005	0.01	0.02
PM ₁₀	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

 $^{^{1}}$ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison			
Species Proposed Action Production Emissions (ton/yr) WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr) WRAP Phase III			
NOx	5.6	16,547	0.03%
VOC	10.3	127,495	0.01%

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Uintah Basin
Data

Appendix D:

Proposed Action Annual Emissions Tables: 7 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹			
Pollutant	Development	Production	Total
NOx	3.8	2.1	5.9
CO	2.2	1.08	3.28
VOC	0.1	11.9	12
SO ₂	0.005	0.01	0.02
PM_{10}	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison				
Species	Proposed Action Production Emissions (ton/yr) WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr) WRAP Phase III			
NOx	5.9	16,547	0.03%	
VOC	12	127,495	0.01%	

 $[^]a\ http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html$

Uintah Basin Data

Appendix E:

Proposed Action Annual Emissions Tables: 8 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year)¹

Pollutant	Development	Production	Total
NOx	3.8	2.4	6.2
СО	2.2	1.08	3.28
VOC	0.1	13.6	13.7
SO ₂	0.005	0.01	0.02
PM ₁₀	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison							
Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr) Percentage of Proposed Action to WRAP Phase III					
NOx	6.2	16,547	0.03%				
VOC	13.7	127,495	0.01%				

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Appendix F:

Proposed Action Annual Emissions Tables: 10 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹							
Pollutant Development Production Total							
NOx	3.8	3	6.8				
CO	2.2	1.08	3.28				
VOC	0.1	17	17.1				
SO_2	0.005	0.01	0.02				

PM_{10}	1.7	0.11	1.81
PM _{2.5}	0.4	0.05	0.45
Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison							
Species	Proposed Action Production Emissions (ton/yr)	WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr)	Percentage of Proposed Action to WRAP Phase III				
NOx	6.8	16,547	0.03%				
VOC	17.1	127,495	0.01%				

 $[^]a\ http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html$

Appendix G:

Proposed Action Annual Emissions Tables: 12 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹							
Pollutant	Development	Production	Total				
NOx	3.8	3.6	7.4				
CO	2.2	1.08	3.28				
VOC	0.1	20.4	20.5				
SO_2	0.005	0.01	0.02				
PM_{10}	1.7	0.11	1.81				
PM _{2.5}	0.4	0.05	0.45				

Benzene	2.20E-03	0.12	0.12
Toluene	1.60E-03	0.2	0.2
Ethylbenzene	3.40E-04	0.01	0.01
Xylene	1.10E-03	0.09	0.09
n-Hexane	1.70E-04	0.51	0.51
Formaldehyde	1.30E-02	1.30E-04	1.31E-02

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison							
Species Proposed Action Production Emissions (ton/yr)		WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr) WRAP Phase Percer Action WRAP Phase					
NOx	7.4	16,547	0.03%				
VOC	20.5	127,495	0.01%				

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html

Appendix G:

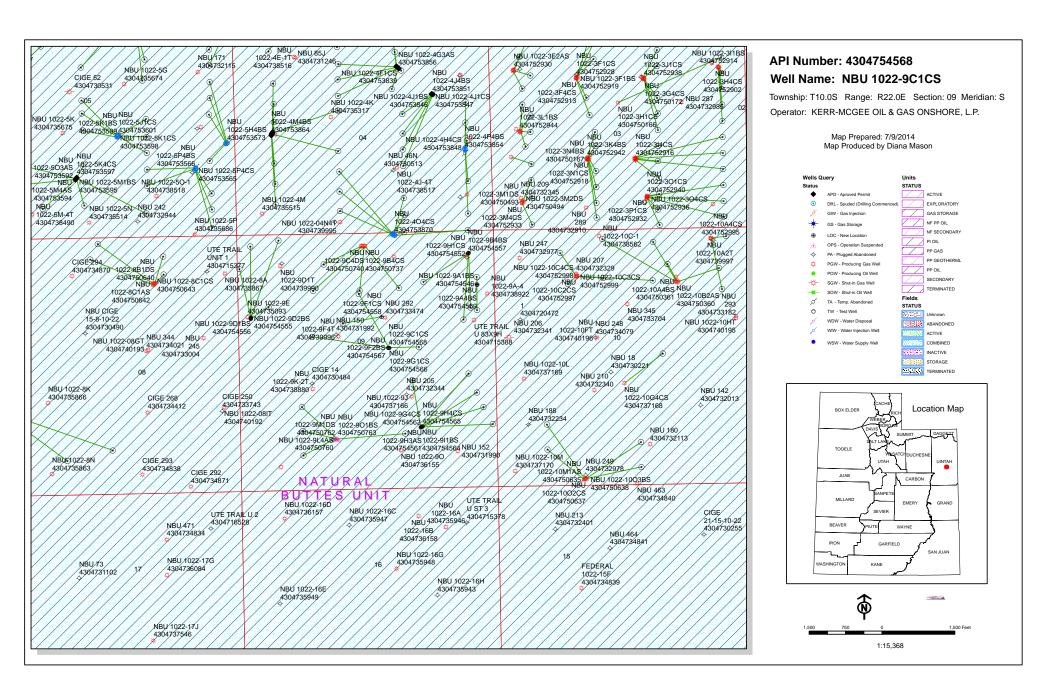
Proposed Action Annual Emissions Tables: 15 Well Pad

Table 1: Proposed Action Annual Emissions (tons/year) ¹							
Pollutant	Development	Production	Total				
NOx	3.8	4.5	8.3				
CO	2.2	1.08	3.28				
VOC	0.1	25.5	25.6				
SO ₂	0.005	0.01	0.02				
PM ₁₀	1.7	0.11	1.81				
PM _{2.5}	0.4	0.05	0.45				
Benzene	2.20E-03	0.12	0.12				
Toluene	1.60E-03	0.2	0.2				
Ethylbenzene	3.40E-04	0.01	0.01				
Xylene	1.10E-03	0.09	0.09				
n-Hexane	1.70E-04	0.51	0.51				
Formaldehyde	1.30E-02	1.30E-04	1.31E-02				

¹ Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison							
Species	Proposed Action Production Emissions (ton/yr)		WRAP Phase III 2012 Uintah Basin Emission Inventory ^a (ton/yr) Percentage of Proposed Action to WRAP Phase III				
NOx	8.3	16,547	0.03%				
VOC	25.6	127,495	0.01%				

^a http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html



API Well Number: 43047545680000

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office 440 West 200 South, Suite 500 Salt Lake City, UT 84101

IN REPLY REFER TO: 3160 (UT-922)

July 14, 2014

Memorandum

To: Assistant Field Office Manager Minerals,

Vernal Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2014 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Mason, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2014 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

NBU 921-19A PAD

43-047-54560	NBU	921-19A1BS			R21E R21E		
43-047-54583	NBU	921-19A1CS			R21E R21E		
43-047-54584	NBU	921-29A4CS		 	R21E R21E	 	
43-047-54585	NBU	921-19A4BS			R21E R21E		
43-047-54586		921-19H1BS			R21E R21E		
NBU 1022-9J PAD 43-047-54561		1022-9H3AS			R22E R22E		
43-047-54562	NBU	1022-9G4CS			R22E R22E		
43-047-54563	NBU	1022-9I1DS		 	R22E R22E	 	
43-047-54564	NBU	1022-9I1BS			R22E R22E		
43-047-54565	NBU	1022-9H4CS		 	R22E R22E	 	

RECEIVED: July 16, 2014

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

NBU 1022-9G PAI)										
43-047-54566	NBU	1022-9G1CS					R22E R22E		FNL FNL	2300 1691	
43-047-54567	NBU	1022-9F2BS	BHL	Sec Sec			R22E R22E				FEL FWL
43-047-54568		1022-9C1CS	BHL				R22E R22E				
NBU 1022-9A PAI		1000 07400		a	0.0	m1 0 0	D00E	0000		0.406	
43-047-54569		1022-9A4BS					R22E R22E				
NBU 921-19B PAI											
43-047-54587	NBU	921-19B4CS					R21E R21E				
43-047-54588	NBU	921-19G1BS					R21E R21E				
43-047-54589	NBU	921-19B1CS					R21E R21E				
43-047-54590	NBU	921-19B1BS					R21E R21E			2066 1958	
NBU 921-19C PAI)										
43-047-54591	NBU	921-19C1BS	BHL				R21E R21E				

This office has no objection to permitting the wells at this time.



bcc: File - Natural Buttes Unit

Division of Oil Gas and Mining

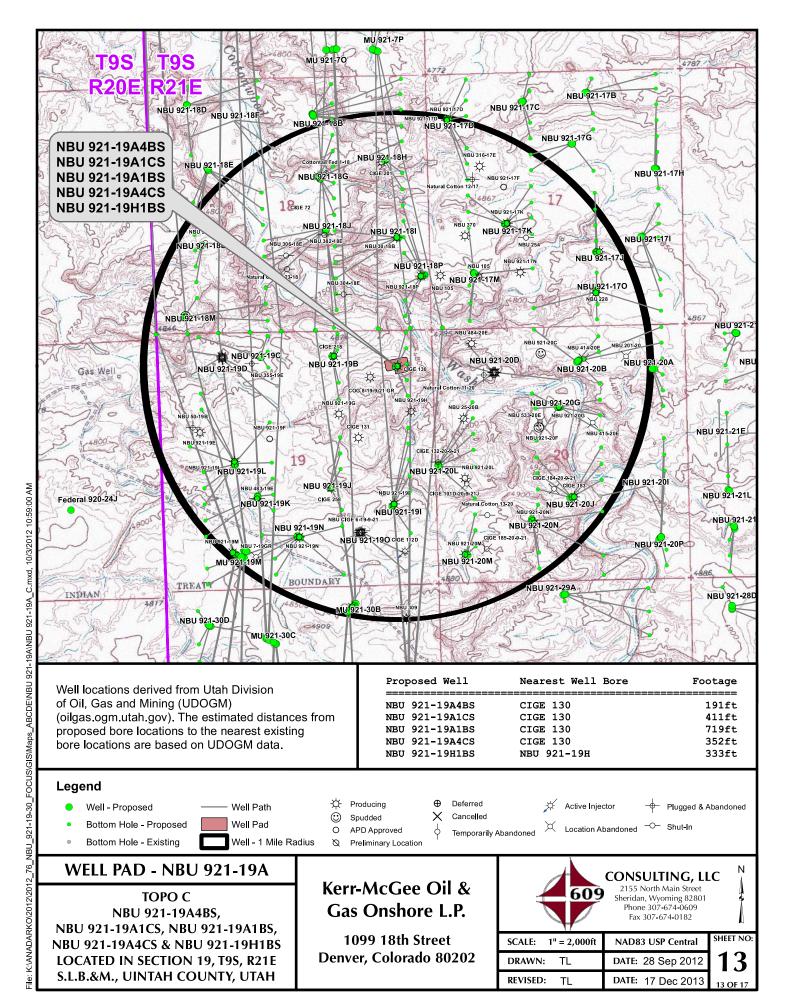
Central Files Agr. Sec. Chron Fluid Chron

MCoulthard:mc:7-14-14

Page 2

API Number	Well Name	Surface Location
43-047-54560	NBU 921-19A1BS	Sec 19 T09S R21E 0785 FNL 0751 FEL
43-047-54561	NBU 1022-9H3AS	Sec 09 T10S R22E 1926 FSL 1766 FEL
43-047-54562	NBU 1022-9G4CS	Sec 09 T10S R22E 1917 FSL 1784 FEL
43-047-54563	NBU 1022-9I1DS	Sec 09 T10S R22E 1922 FSL 1775 FEL
43-047-54564	NBU 1022-9I1BS	Sec 09 T10S R22E 1931 FSL 1757 FEL
43-047-54565	NBU 1022-9H4CS	Sec 09 T10S R22E 1935 FSL 1748 FEL
43-047-54566	NBU 1022-9G1CS	Sec 09 T10S R22E 1685 FNL 2300 FEL
43-047-54567	NBU 1022-9F2BS	Sec 09 T10S R22E 1688 FNL 2319 FEL
43-047-54568	NBU 1022-9C1CS	Sec 09 T10S R22E 1687 FNL 2309 FEL
43-047-54569	NBU 1022-9A4BS	Sec 09 T10S R22E 0390 FNL 0496 FEL
43-047-54583	NBU 921-19A1CS	Sec 19 T09S R21E 0784 FNL 0741 FEL
43-047-54584	NBU 921-29A4CS	Sec 19 T09S R21E 0787 FNL 0761 FEL
43-047-54585	NBU 921-19A4BS	Sec 19 T09S R21E 0782 FNL 0731 FEL
43-047-54586	NBU 921-19H1BS	Sec 19 T09S R21E 0789 FNL 0771 FEL
43-047-54587	NBU 921-19B4CS	Sec 19 T09S R21E 0546 FNL 2076 FEL
43-047-54588	NBU 921-19G1BS	Sec 19 T09S R21E 0547 FNL 2086 FEL
43-047-54589	NBU 921-19B1CS	Sec 19 T09S R21E 0545 FNL 2056 FEL
43-047-54590	NBU 921-19B1BS	Sec 19 T09S R21E 0545 FNL 2066 FEL
43-047-54591	NBU 921-19C1BS	Sec 19 T09S R21E 0522 FNL 2164 FWL

1 of 1 7/14/2014



API Well Number:

Scientific Drilling

-750

750

1500

Vertical Section at 17.26° (1500 ft/in)

2250

3000

API Well Number: 4304756j6618010AHO UTM (feet), NAD27, Zone 12N

Site: NBU 921-19A Pad Well: NBU 921-19A1BS

Wellbore: OH

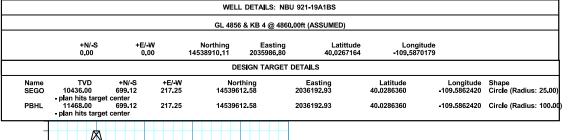
Design: PLAN #1 PRELIMINARY

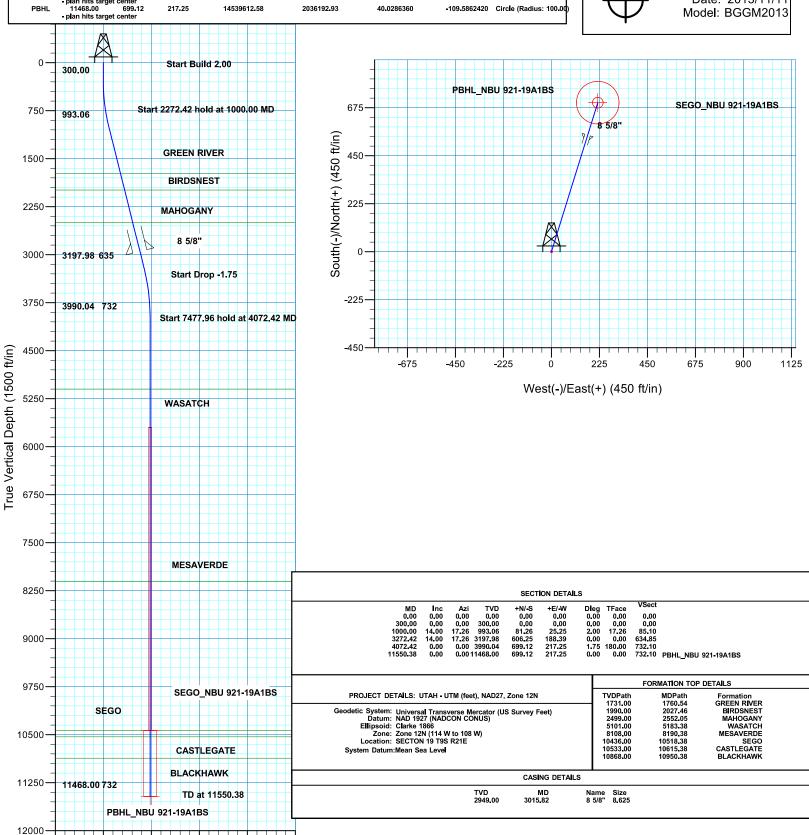




Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52011.0snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013





Plan: PLAN #1 PRELIMINARY (NBU 921-19A1BS/OH)

Scientific Drilling

Vertical Section at 29.14° (1500 ft/in)

API Well Number: 4304756663800000 UTM (feet), NAD27, Zone 12N

Site: NBU 921-19A Pad Well: NBU 921-19A1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

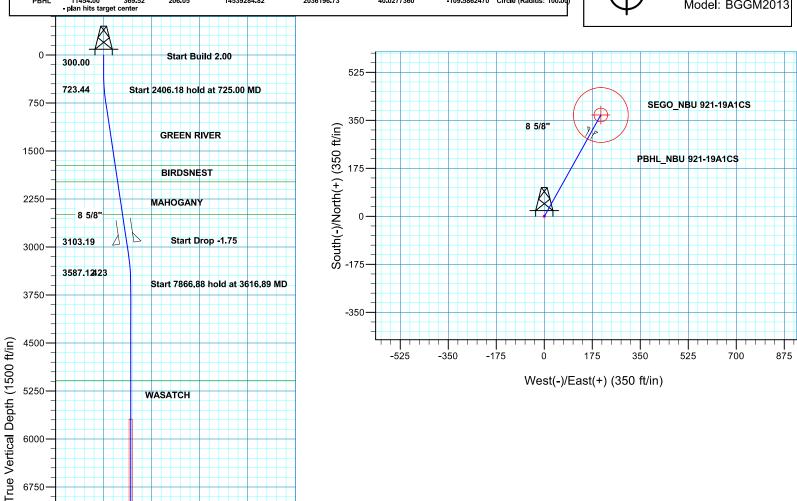


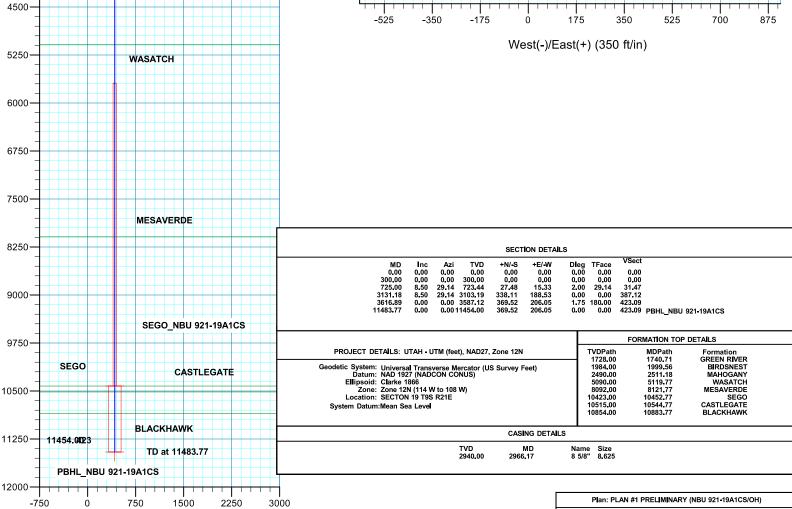


Azimuths to True North Magnetic North: 10.89°

Magnetic Field Strength: 52011.0snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013







API Well Number:

Scientific Drilling

API Well Number: 43047956j56fx8010AHO-UTM (feet), NAD27, Zone 12N

Site: NBU 921-19A Pad Well: NBU 921-19A4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY





Azimuths to True North Magnetic North: 10.89°

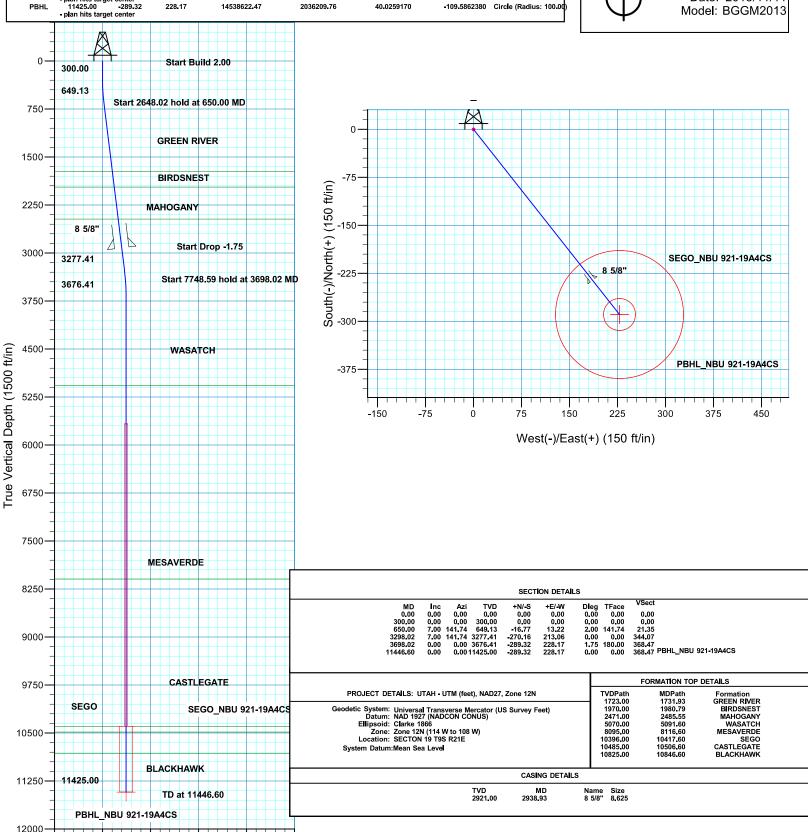
Magnetic Field Strength: 52011.0snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013



1500

Vertical Section at 141.74° (1500 ft/in)

2250



Plan: PLAN #1 PRELIMINARY (NBU 921-19A4CS/OH)

API Well Number: 4304756j6cd:800AHO-UTM (feet), NAD27, Zone 12N Site: NBU 921-19A Pad Scientific Drilling

Well: NBU 921-19A4BS

Wellbore: OH

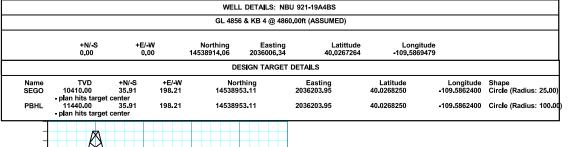
Design: PLAN #1 PRELIMINARY

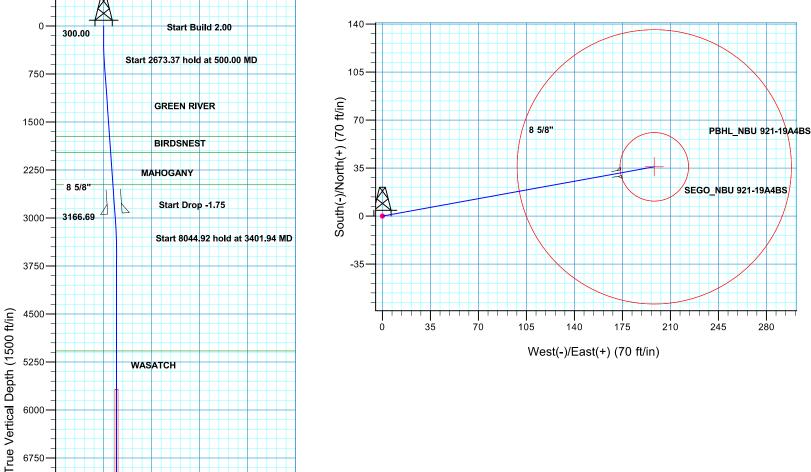


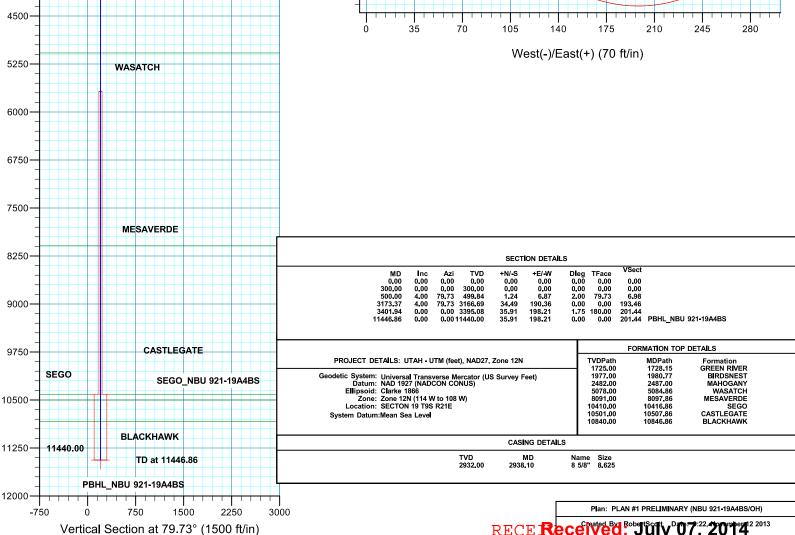


Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52011.0snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013







Scientific Drilling

750

1500

Vertical Section at 158.87° (1500 ft/in)

2250

API Well Number: 4304756j6cd:800AHO-UTM (feet), NAD27, Zone 12N

Site: NBU 921-19A Pad Well: NBU 921-19H1BS

Wellbore: OH

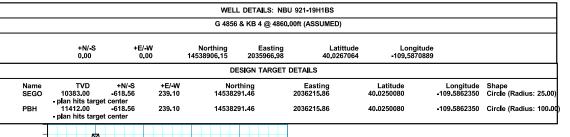
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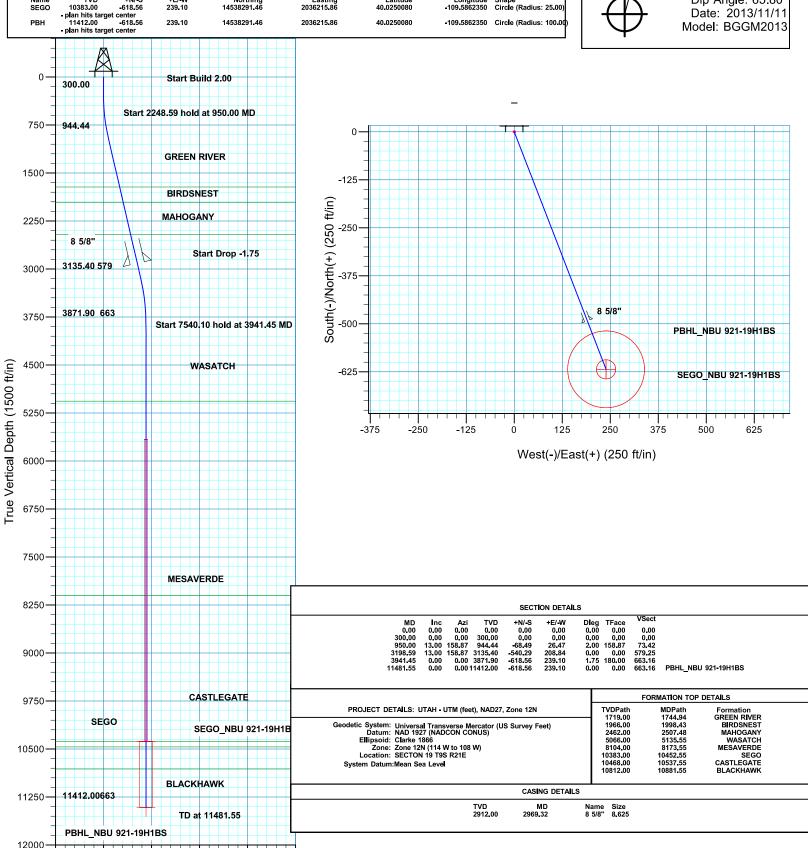




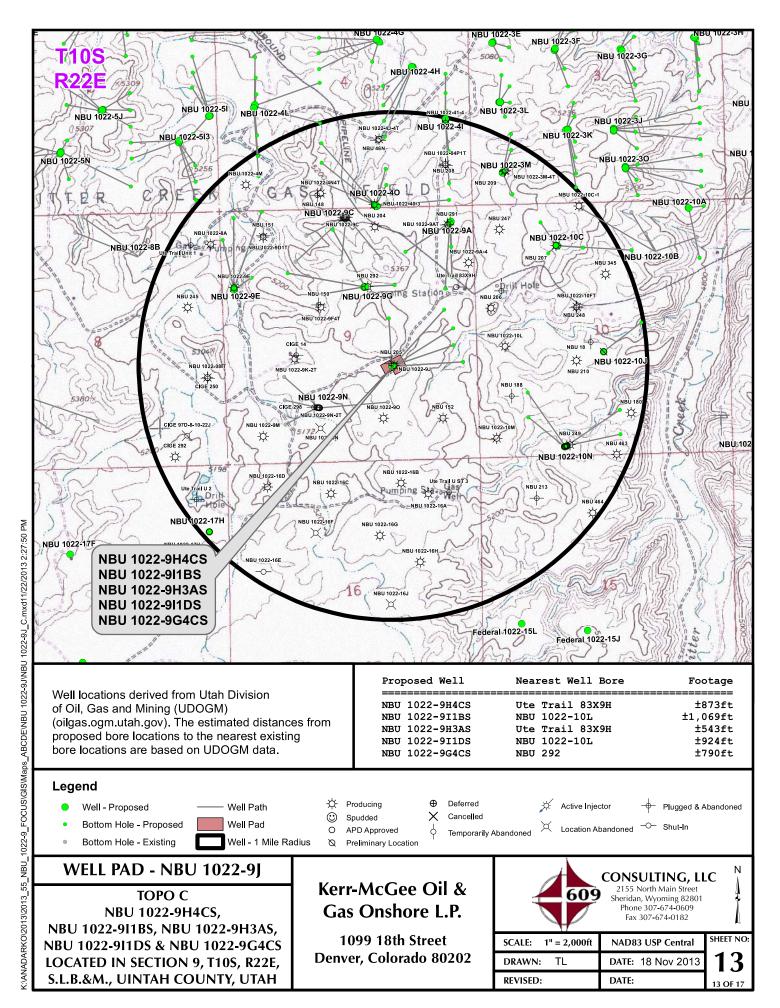
Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52011.0snT Dip Angle: 65.80°





Plan: PLAN #1 PRELIMINARY (NBU 921-19H1BS/OH)



API Well Number: 4304 756 666:80 (120), NAD27, Zone 12N

Scientific Drilling

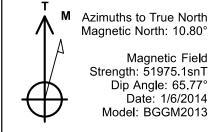
Vertical Section at 43.62° (1500 ft/in)

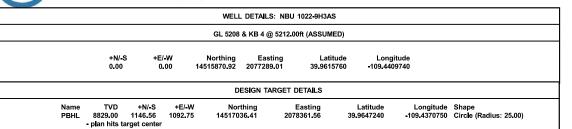
Site: NBU 1022-9J PAD Well: NBU 1022-9H3AS

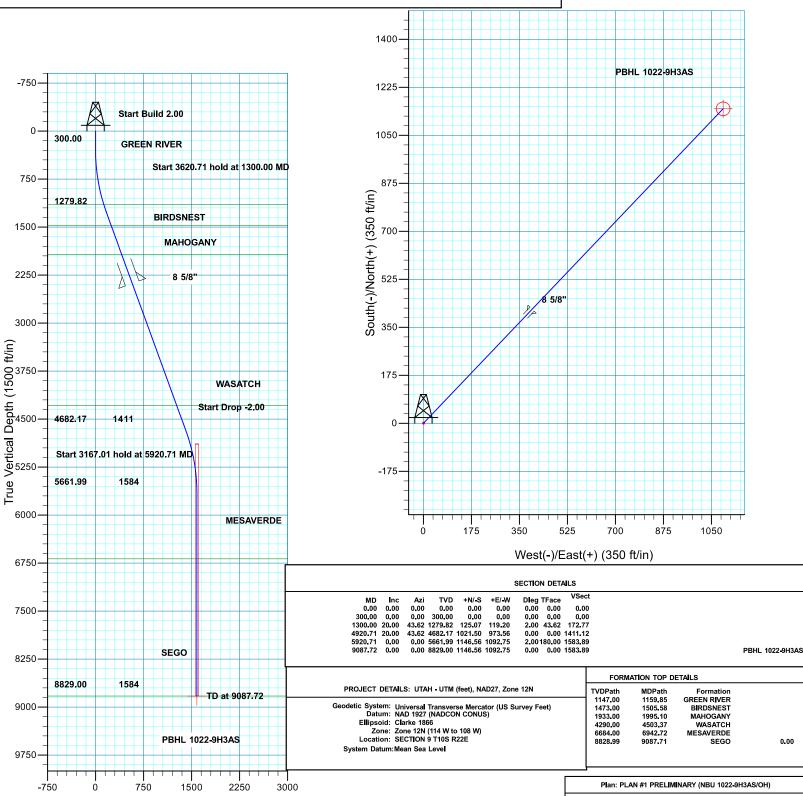
Wellbore: OH

Design: PLAN #1 PRELIMINARY









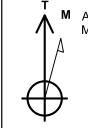
API Well Number: 4304756j566:801AHO UTM (feet), NAD27, Zone 12N

Site: NBU 1022-9J PAD Well: NBU 1022-9G4CS Scientific Drilling Wellbore: OH

Vertical Section at 357.57° (1500 ft/in)

Design: PLAN #1 PRELIMINARY

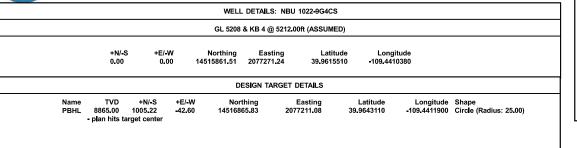


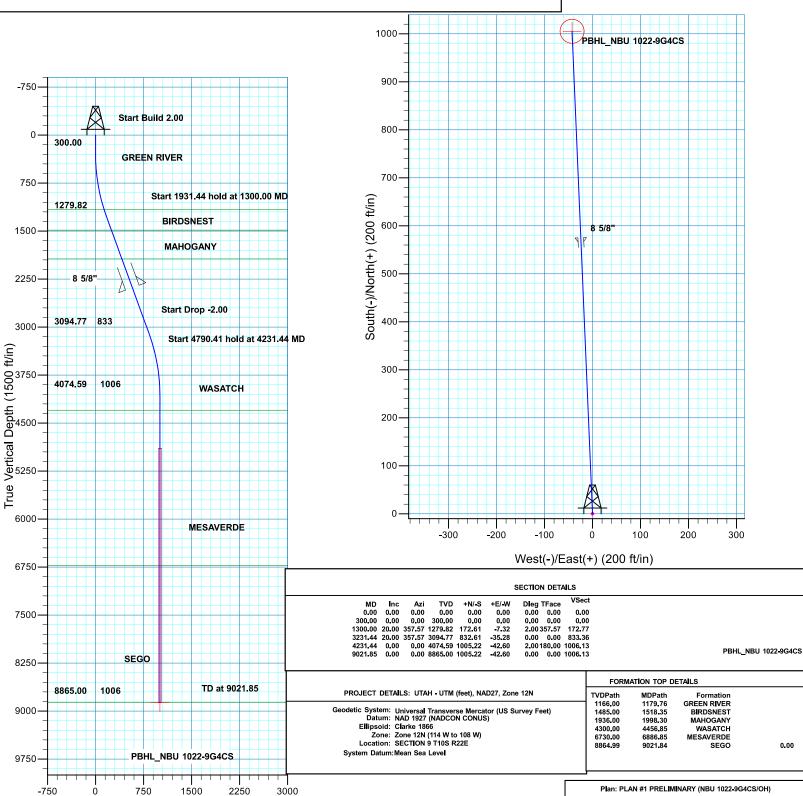


Azimuths to True North Magnetic North: 10.80°

> Magnetic Field Strength: 51975.1snT Dip Angle: 65.77 Date: 1/6/2014

Model: BGGM2013





API Well Number: 4304756jecti:801AHO-UTM (feet), NAD27, Zone 12N Site: NBU 1022-9J PAD

Scientific Drilling

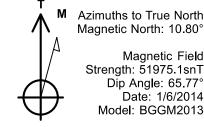
Vertical Section at 87.70° (1500 ft/in)

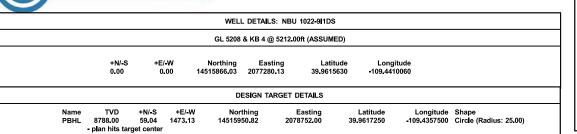
Well: NBU 1022-9I1DS

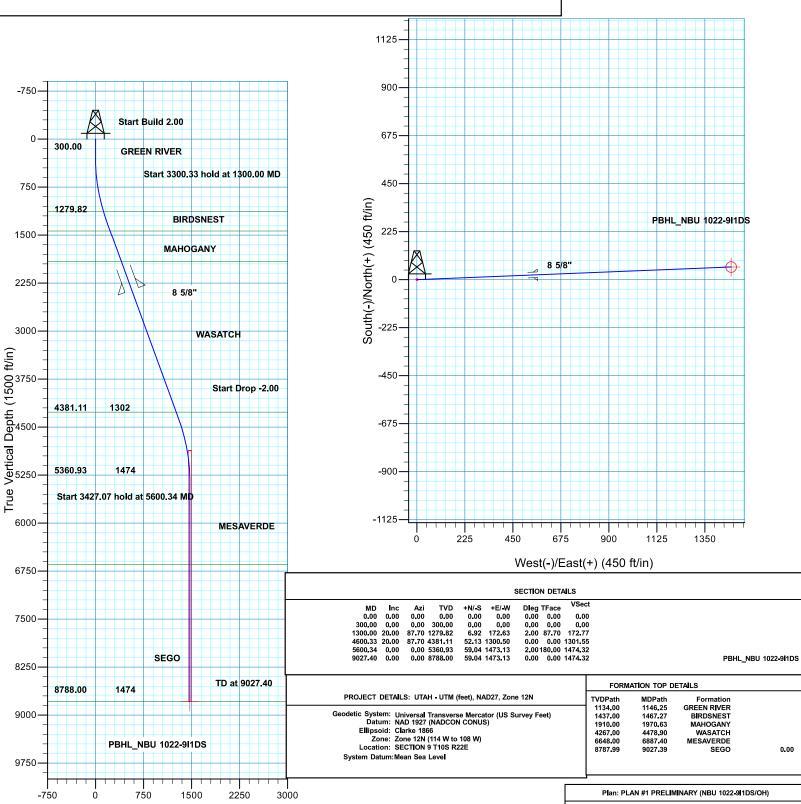
Wellbore: OH

Design: PLAN #1 PRELIMINARY









API Well Number: 43047 5 feb (2007 A) - UTM (feet), NAD27, Zone 12N

Scientific Drilling

750

1500

Vertical Section at 72.39° (1500 ft/in)

2250

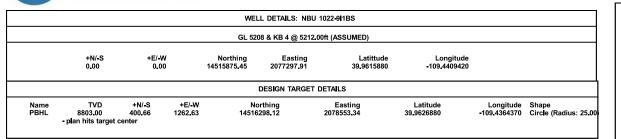
3000

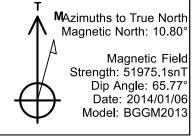
Site: NBU 1022-9J PAD Well: NBU 1022-911BS

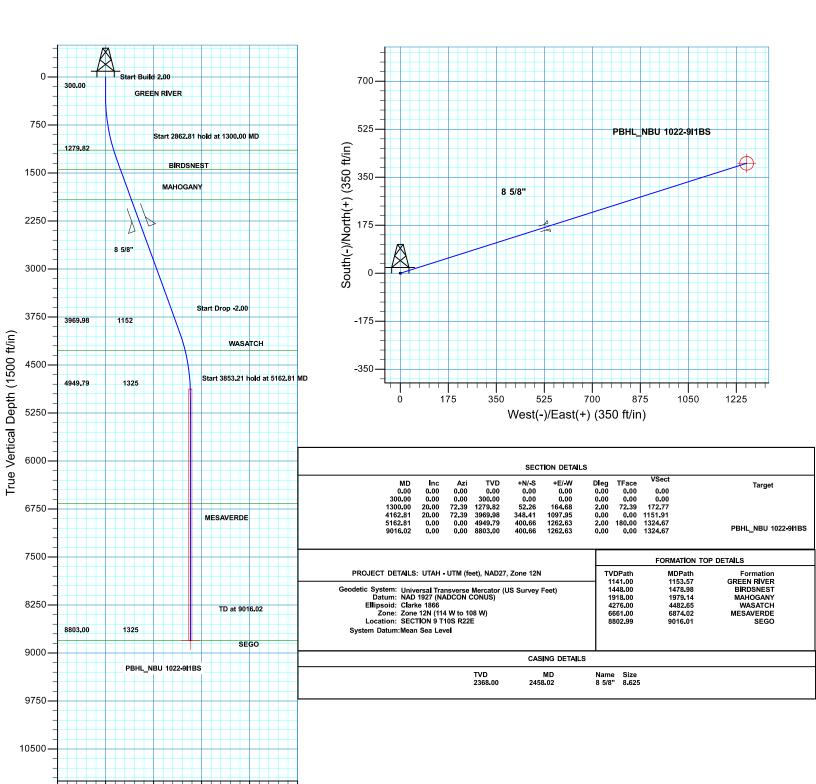
Wellbore: OH

Design: PLAN #1 PRELIMINARY









Plan: PLAN #1 PRELIMINARY (NBU 1022-911BS/OH)

API Well Number: 430475660:801040-UTM (feet), NAD27, Zone 12N

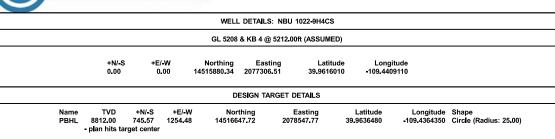
Scientific Drilling

Vertical Section at 59.28° (1500 ft/in)

Site: NBU 1022-9J PAD Well: NBU 1022-9H4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

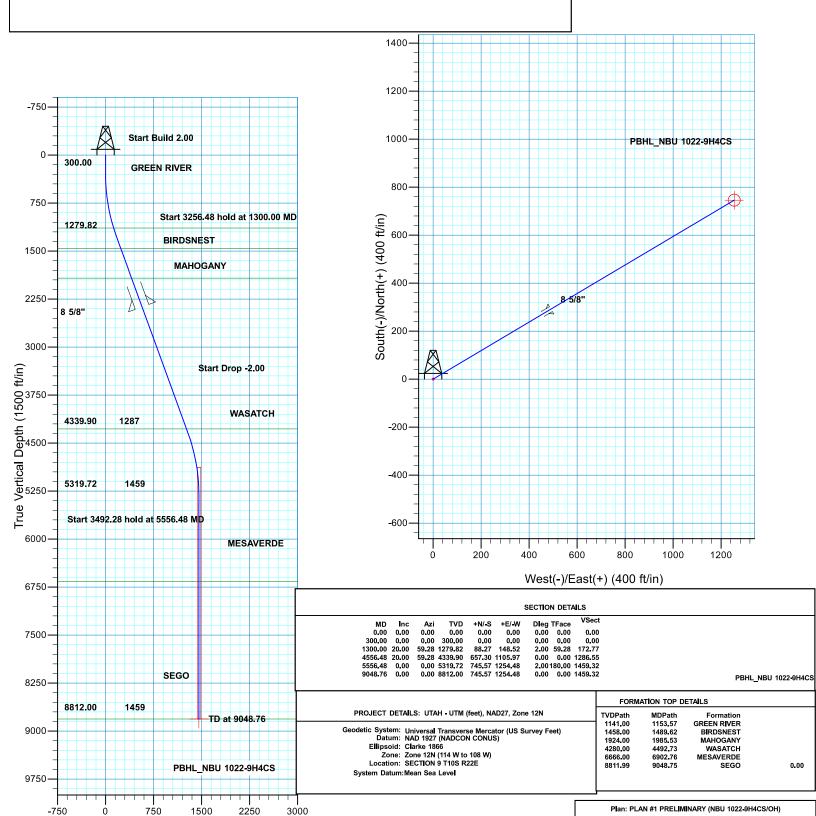


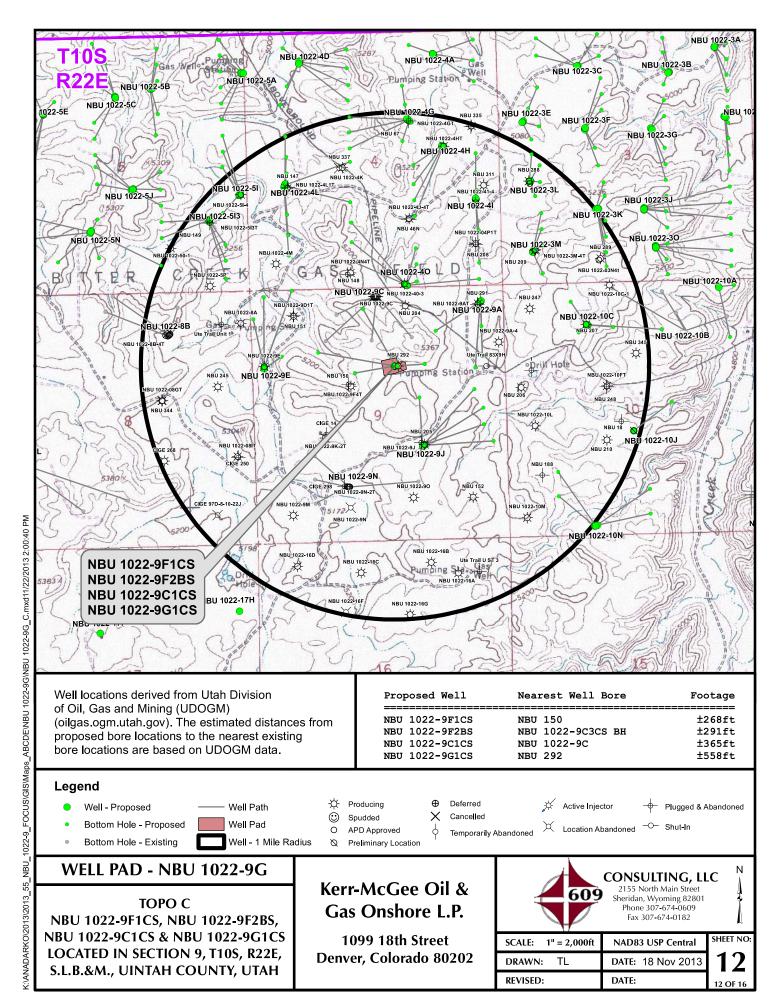


Model: IGRF2010

Azimuths to True North Magnetic North: 10.72°

Magnetic Field Strength: 52059.7snT Dip Angle: 65.78°
Date: 1/6/2014





API Well Number: 430475666:807AHO UTM (feet), NAD27, Zone 12N

Scientific Drilling

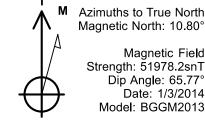
Vertical Section at 88.04° (1500 ft/in)

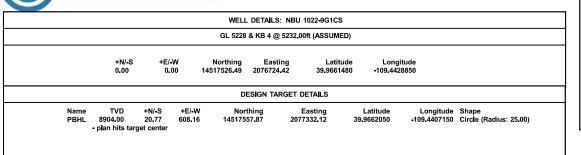
Site: NBU 1022-9G PAD Well: NBU 1022-9G1CS

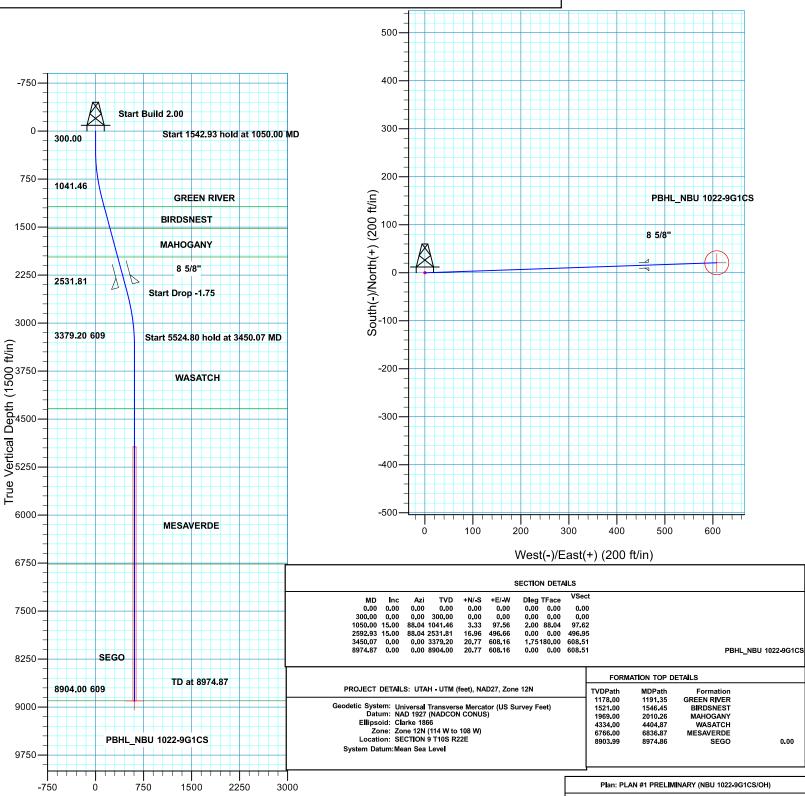
Wellbore: OH

Design: PLAN #1 PRELIMINARY









API Well Number: 4304 756 66:80 (API) UTM (feet), NAD27, Zone 12N

Scientific Drilling

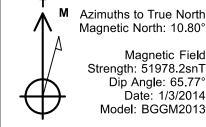
Vertical Section at 331.90° (1500 ft/in)

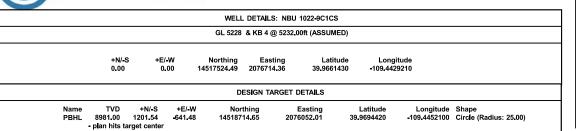
Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY







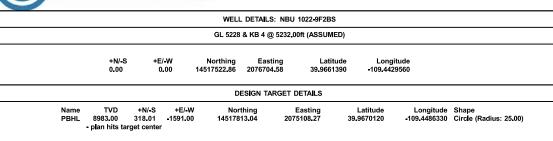
1250 PBHL_NBU 1022-9C1CS 1125 -750 Start Build 2.00 1000 300.00 **GREEN RIVER** 875 750 Start 2972.11 hold at 1300.00 MD South(-)/North(+) (250 ft/in) 1279.82 750 BIRDSNEST 1500 MAHOGANY 625 2250 8 5/8" 8 5/8" 500 3000 True Vertical Depth (1500 ft/in) 375 Start Drop -2.00 4072.69 1189 250 WASATCH 5052.50 1362 125 tart 3928.50 hold at 5272.11 MD 0 6000 **-**750 -625 -500 -375 MESAVERDE West(-)/East(+) (250 ft/in) 6750 SECTION DETAILS Dieg TFace 0.00 0.00 0.00 0.00 MD 0.00 300.00 +E/-W 0.00 Inc 0.00 Azi 0.00 7500 0.00 0.00 0.00 300.00 0.00 0.00 1300.00 20.00 331.90 1279.82 152.41 4272.11 20.00 331.90 4072.69 1049.14 81.37 560.11 2.00331.90 172.77 0.00 0.00 1189.29 5272.11 0.00 0.00 5052.50 1201 54 2.00180.00 1362.06 **PBHL NBU 1022-9C1CS** 0.00 8981.00 1201.54 SEGO 8250 FORMATION TOP DETAILS PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N TD at 9200.61 Formation GREEN RIVER BIRDSNEST **TVDPath** 8981.00 1362 1197.00 1554.00 1212.34 1591.78 Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 9 T10S R22E 9000 2078 11 4601 50 7083 61 2011.00 4388.00 MAHOGANY WASATCH 6864.00 MESAVERDE **PBHL NBU 1022-9C1CS** System Datum: Mean Sea Level 9750 Plan: PLAN #1 PRELIMINARY (NBU 1022-9C1CS/OH) 1500 3000

API Well Number: 4304756j566:801AHO UTM (feet), NAD27, Zone 12N

Site: NBU 1022-9G PAD Well: NBU 1022-9F2BS Scientific Drilling Wellbore: OH

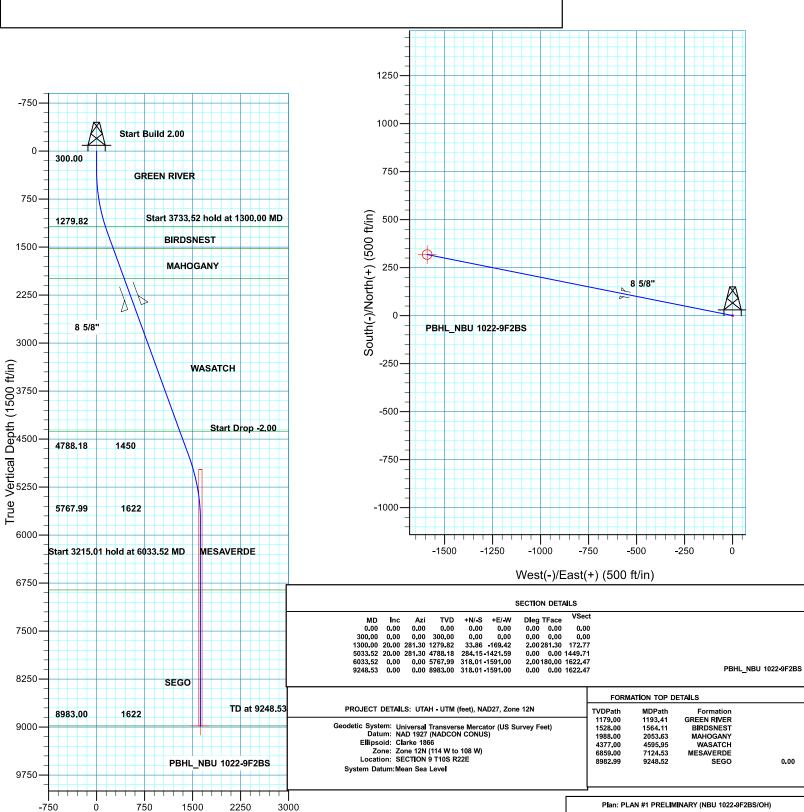
Vertical Section at 281.30° (1500 ft/in)

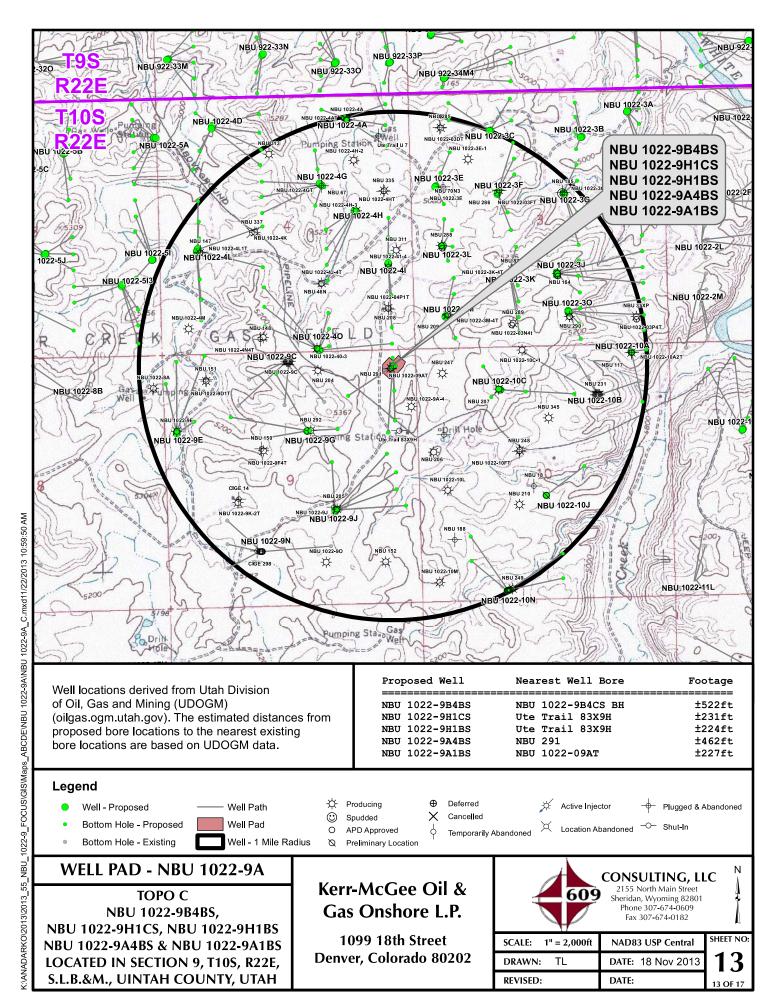
Design: PLAN #1 PRELIMINARY





Azimuths to True North Magnetic North: 10.80° Magnetic Field Strength: 51978.2snT Dip Angle: 65.77 Date: 1/3/2014 Model: BGGM2013





API Well Number: 4304756j566:801AHO UTM (feet), NAD27, Zone 12N

WELL DETAILS: NBU 1022-9A4BS

GL 5137 & KB 4 @ 5141.00ft (ASSUMED)

Easting 2078502.65

Wellbore: OH Scientific Drilling

Northing 14518868.96

+N/-S 0.00

-750

1500

Vertical Section at 179.38° (1500 ft/in)

2250

3000

0.00

Site: NBU 1022-9A PAD Well: NBU 1022-9A4BS

Latitude 39.9697480

Longitude -109.4364570

Design: PLAN #1 PRELIMINARY





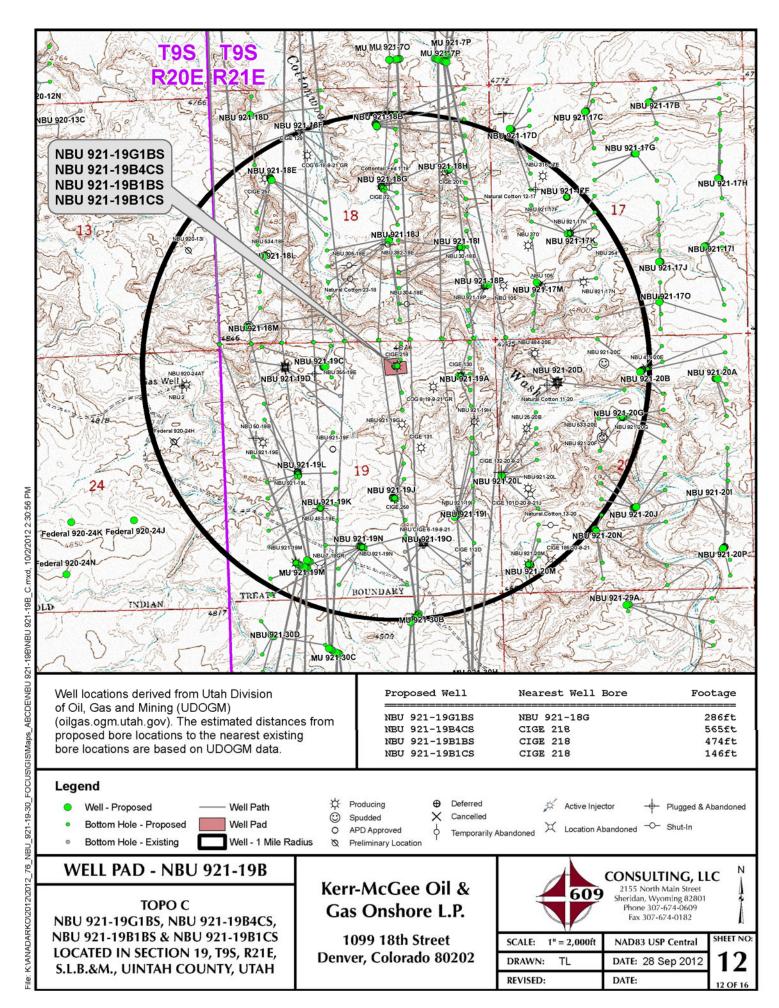
Azimuths to True North Magnetic North: 10.72°

> Magnetic Field Strength: 52066.1snT Dip Angle: 65.79° Date: 1/3/2014 Model: IGRF2010

DESIGN TARGET DETAILS TVD 8790.00 Northing 14518347.59 Easting 2078517.12 Latitude 39.9683160 Longitude Shape -109.4364380 Circle (Radius: 25.00) 521.55 - plan misse target center by 0.28ft at 8855.99ft MD (8790.00 TVD, -521.55 N, 5.60 E)

75 0 Start Build 2.00 300.00 **GREEN RIVER** 750 Start 759.16 hold at 1185.19 MD -150 1171.17 South(-)/North(+) (150 ft/in)-300-322 BIRDSNEST 1500 MAHOGANY 1894.38 Start Drop 175 2250 2890.00522 Start 5900.00 hold at 2955.99 MD 3000 True Vertical Depth (1500 ft/in) 8 5/8' WASATCH -450 -525 **PBHL NBU 1022-9A4BS** -600 6000 -225 -150 225 West(-)/East(+) (150 ft/in) MESAVERDE 6750 SECTION DETAILS Dleg TFace 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 300.00 0.00 0.00 300.00 1185.19 17.70 179.38 1171.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.00179.38 135.67 0.00 7500 135.66 1944.35 17.70 179.38 1894.38 2955.99 0.00 0.00 2890.00 -366.51 0.00 0.00 366.53 1.75180.00 521.58 SEGO 521.55 0.00 8855.99 0.00 8790.00 521.55 0.00 0.00 521.58 **PBHL NBU 1022-9A4BS** 8250 TD at 8855.99 FORMATION TOP DETAILS 8790.00522 PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N Formation GREEN RIVER BIRDSNEST **TVDPath** 1108.70 1458.98 1098.00 1432.00 Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 9 T10S R22E 9000 1892.00 4246.00 1941.85 4311.99 MAHOGANY WASATCH PBHL_NBU 1022-9A4BS 6631.00 MESAVERDE System Datum: Mean Sea Level 9750

Plan: PLAN #1 PRELIMINARY (NBU 1022-9A4BS/OH)



Scientific Drilling

True Vertical Depth (1500 ft/in)

API Well Number: 4304756j6cd:800AHO-UTM (feet), NAD27, Zone 12N

Site: NBU 921-19B PAD Well: NBU 921-19B4CS

Wellbore: OH

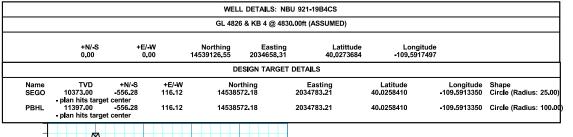
Design: PLAN #1 PRELIMINARY

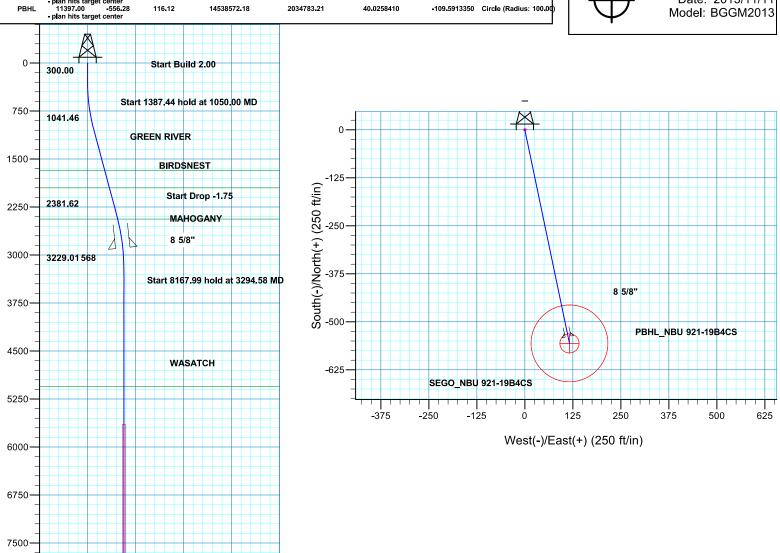


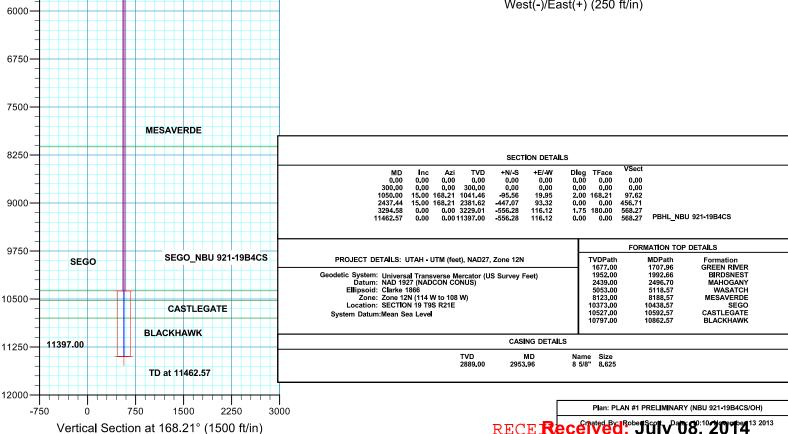


Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52010.9snT Dip Angle: 65.80° Date: 2013/11/11







API Well Number:

Scientific Drilling

750

Vertical Section at 172.23° (1500 ft/in)

1500

2250

3000

API Well Number: 4304756663800000 UTM (feet), NAD27, Zone 12N

Site: NBU 921-19B PAD Well: NBU 921-19G1BS

Wellbore: OH

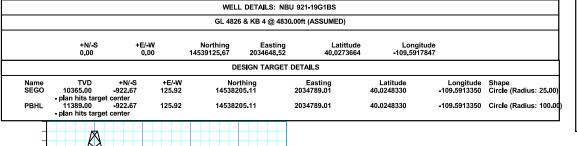
Design: PLAN #1 PRELIMINARY

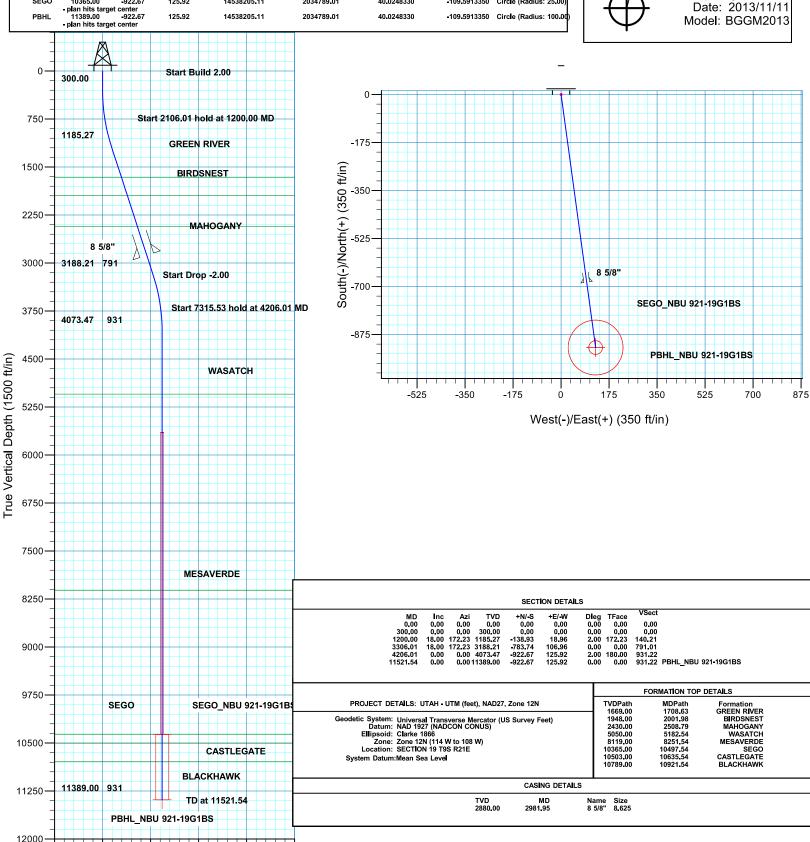




Azimuths to True North Magnetic North: 10.89°

Magnetic Field Strength: 52010.9snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013





Plan: PLAN #1 PRELIMINARY (NBU 921-19G1BS/OH)

API Well Number:

Scientific Drilling

True Vertical Depth (1500 ft/in)

Vertical Section at 31.76° (1500 ft/in)

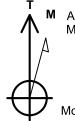
API Well Number: 430475656680100000 UTM (feet), NAD27, Zone 12N

Site: NBU 921-19B PAD Well: NBU 921-19B1CS

Wellbore: OH

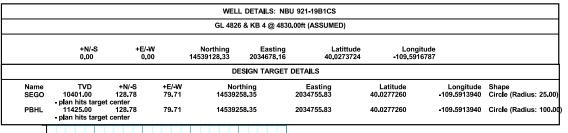
Design: PLAN #1 PRELIMINARY



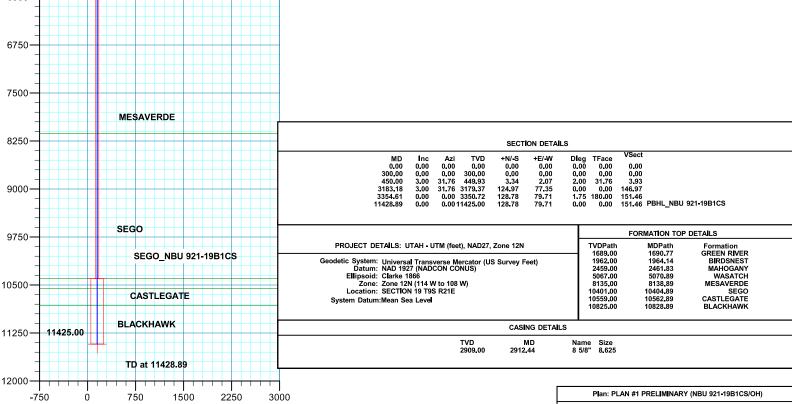


Azimuths to True North Magnetic North: 10.81°

Magnetic Field Strength: 52093.1snT Dip Angle: 65.81° Date: 2013/11/11 lodel: USER DEFINED



Model: USER DEFINED 0 Start Build 2.00 300.00 Start 2733.18 hold at 450.00 MD 750 GREEN RIVER 200 1500 BIRDSNEST PBHL_NBU 921-19B1CS South(-)/North(+) (80 ft/in) 160 MAHOGANY 2250 8 5/8" 8 5/8" Start Drop -1.75 3000 3179.37 SEGO_NBU 921-19B1CS 151 Start 8074.28 hold at 3354.61 MD 3750 40 4500 WASATCH 5250 ò 240 -40 40 160 200 -80 80 120 West(-)/East(+) (80 ft/in) 6000 6750



Scientific Drilling

BLACKHAWK

Vertical Section at 12.84° (1500 ft/in)

1500

2250

3000

11250

12000

11441.0079

PBHL_NBU 921-19B1BS

750

API Well Number: 4304756j6cd:800AHO-UTM (feet), NAD27, Zone 12N

Site: NBU 921-19B PAD Well: NBU 921-19B1BS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

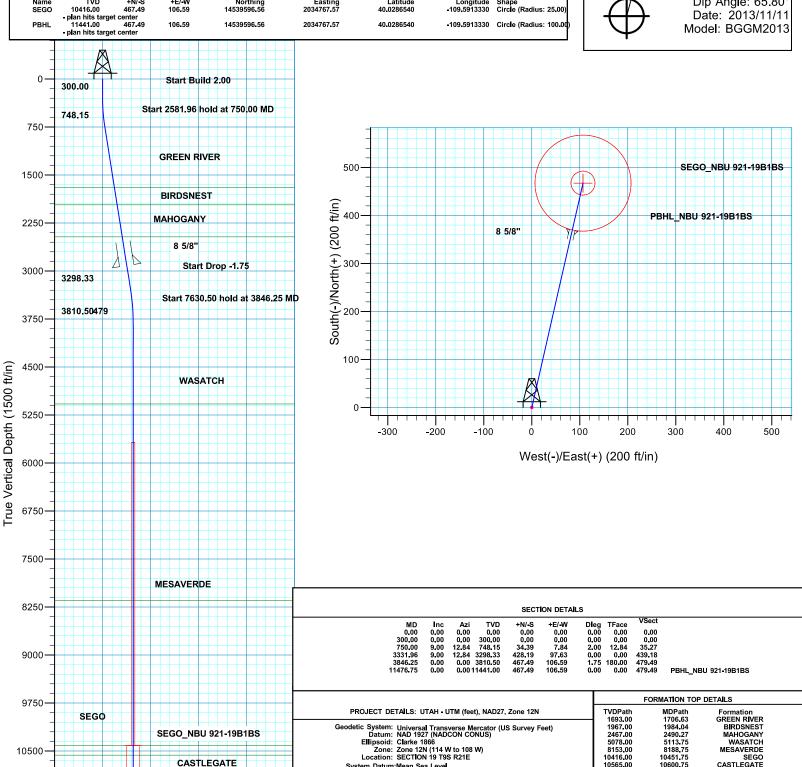




Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52010.9snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013

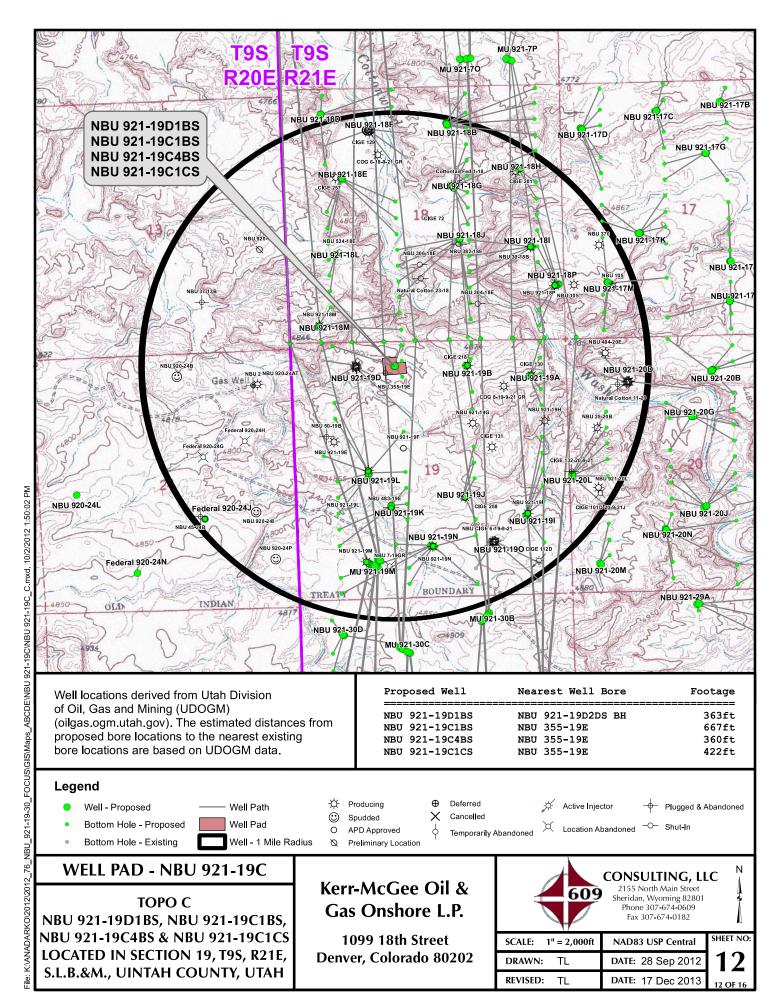




TVDPath 1693.00 1967.00 2467.00 5078.00 8153.00 10416.00 10565.00 10841.00 MDPath 1706.63 1984.04 2490.27 5113.75 8188.75 10451.75 10600.75 10876.75 Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 19 T9S R21E SEGO CASTLEGATE BLACKHAWK System Datum:Mean Sea Level CASING DETAILS

TVD 2917,00 MD 2945.88 Name Size 8 5/8" 8.625

Plan: PLAN #1 PRELIMINARY (NBU 921-19B1BS/OH)



Scientific Drilling

API Well Number: 4304756j6cd:800AHO-UTM (feet), NAD27, Zone 12N

Site: NBU 921-19C PAD Well: NBU 921-19C1BS

Wellbore: OH

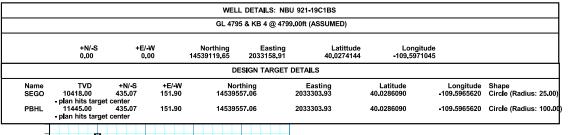
Design: PLAN #1 PRELIMINARY

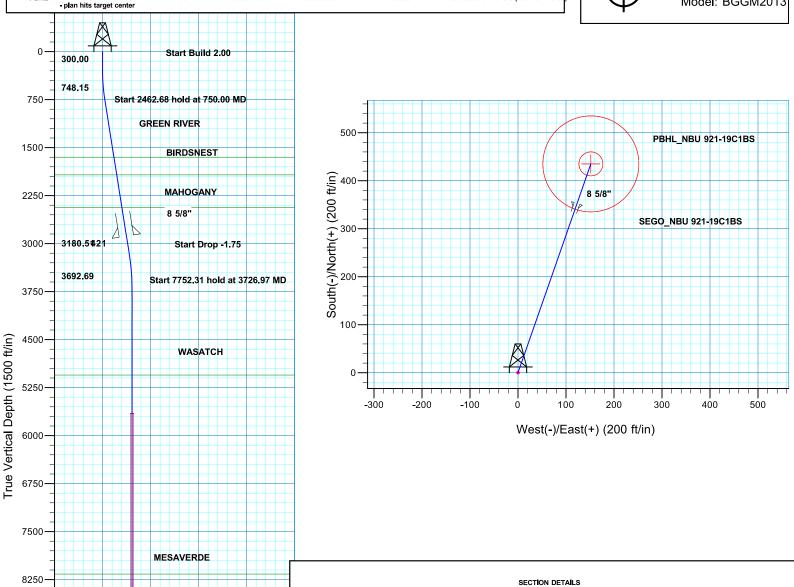


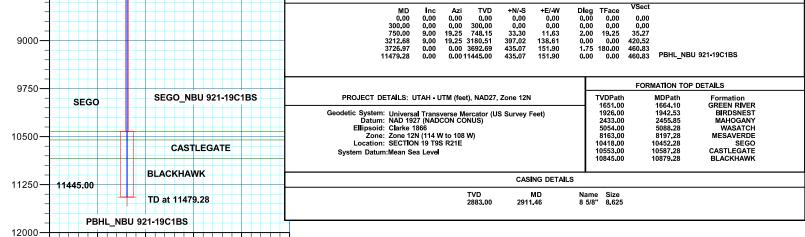


Azimuths to True North Magnetic North: 10.89°

> Magnetic Field Strength: 52010.4snT Dip Angle: 65.80° Date: 2013/11/11 Model: BGGM2013







1500 2250 3000 RECE Received: July 08,2014 13 2013 Vertical Section at 19.25° (1500 ft/in)

Plan: PLAN #1 PRELIMINARY (NBU 921-19C1BS/OH)

API Well Number: 43047545680000

WORKSHEET APPLICATION FOR PERMIT TO DRILL

WELL NAME: NBU 1022-9C1CS

OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) PHONE NUMBER: 720 929-6828

CONTACT: Joel Malefyt

PROPOSED LOCATION: SWNE 09 100S 220E **Permit Tech Review:**

> SURFACE: 1687 FNL 2309 FEL **Engineering Review:**

> **BOTTOM: 0482 FNL 2341 FWL** Geology Review:

COUNTY: UINTAH

LATITUDE: 39.96613 LONGITUDE: -109.44321 **UTM SURF EASTINGS: 632959.00** NORTHINGS: 4424948.00

FIELD NAME: NATURAL BUTTES LEASE TYPE: 1 - Federal

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE LEASE NUMBER: UTU 01196-B

SURFACE OWNER: 1 - Federal **COALBED METHANE: NO**

RECEIVED AND/OR REVIEWED: LOCATION AND SITING:

✓ PLAT R649-2-3.

Unit: NATURAL BUTTES Bond: FEDERAL - WYB000291

Potash R649-3-2. General

Oil Shale 190-5

Oil Shale 190-3 R649-3-3. Exception

Drilling Unit Oil Shale 190-13

Board Cause No: Cause 173-14 Water Permit: 43-8496

Effective Date: 12/2/1999 **RDCC Review:**

Siting: Suspends General Siting Fee Surface Agreement

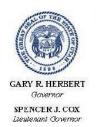
Intent to Commingle ■ R649-3-11. Directional Drill

Commingling Approved

Comments: Presite Completed

Stipulations:

4 - Federal Approval - dmason 15 - Directional - dmason 17 - Oil Shale 190-5(b) - dmason



State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Permit To Drill

Well Name: NBU 1022-9C1CS
API Well Number: 43047545680000
Lease Number: UTU 01196-B
Surface Owner: FEDERAL
Approval Date: 7/17/2014

Issued to:

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

Authority:

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

Conditions of Approval:

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Notification Requirements:

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

• Within 24 hours following the spudding of the well - contact Carol Daniels at 801-538-5284

(please leave a voicemail message if not available) OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website

at http://oilgas.ogm.utah.gov

Reporting Requirements:

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
 - Requests to Change Plans (Form 9) due prior to implementation
 - Written Notice of Emergency Changes (Form 9) due within 5 days
- \bullet Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
 - Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

Approved By:

For John Rogers Associate Director, Oil & Gas Form 3160-3 (August 2007)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT



FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010

Lease Serial No. UTU01196B

·	1441 0 0	1 010011000			
APPLICATION FOR PERMIT	TO DRILL OR REENTER 2014	6. If Indian, Allottee o	r Tribe Name		
la. Type of Work: DRILL REENTER	Vernal	7. If Unit or CA Agree UTU63047A 8. Lease Name and W	ell No.		
lb. Type of Well: Oil Well Gas Well Ot	her Single Zone 🔲 Multip	le Zone NBU 1022-9C1CS			
	JOEL MALEFYT efyt@anadarko.com	9. API Well No. 4304754	1568		
3a. Address 1099 18TH STREET SUITE 1800 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6828 Fx: 720-929-7828	10. Field and Pool, or NATURAL BUT	Exploratory		
4. Location of Well (Report location clearly and in accorda	nce with any State requirements.*)	11. Sec., T., R., M., or	Blk. and Survey or Area		
At surface SWNE 1687FNL 2309FEL At proposed prod. zone NENW 482FNL 2341FWL	39.966109 N Lat, 109.443604 W Lon 39.969408 N Lat, 109.445893 W Lon	Sec 9 T10S R22	E Mer SLB		
 Distance in miles and direction from nearest town or post APPROXIMATELY 49.3 MILES SOUTH OF VEI 	office* RNAL, UT	12. County or Parish UINTAH	13. State UT		
 Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 302' 	16. No. of Acres in Lease 320.00	17. Spacing Unit dedic	ated to this well		
 Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 	19. Proposed Depth	20. BLM/BIA Bond N	o. on file		
365'	9201 MD 8981 TVD	WYB000291	1/200		
21. Elevations (Show whether DF, KB, RT, GL, etc. 5228 GL	22. Approximate date work will start 07/01/2014	23. Estimated duration 60-90 DAYS	JUL 2 I 2011		
	24. Attachments		NV. OF OIL, GAS & MIN!		
e following, completed in accordance with the requirements of	Onshore Oil and Gas Order No. 1, shall be att	ached to this form:	714.		
Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest Syste SUPO shall be filed with the appropriate Forest Service Off	Item 20 above). em Lands, the 5. Operator certifica	ecific information and/or plans as a	•		
25. Signature (Electronic Submission)	Name (Printed/Typed) JOEL MALEFYT Ph: 720-929-66	328	Date 01/24/2014		
Title REGULATORY ANALYST					
Approved by (Signature)	Name (Printed/Typed) Jerry k	(enczka	Dat 1 7 2014		
ittle Assistant Piold Manager Lands & Mineral Resources	Office VERNAL FIELD OFFI				
plication approval does not warrant or certify the applicant hole erations thereon. nditions of approval, if any, are attached.	• •	subject lease which would entitle th			

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Electronic Submission #233156 verified by the BLM Well information System For KERR MCGEE OIL & GAS LP, sent to the Vernal Committed to AFMSS for processing by LESLIE BUHLER on 01/30/2014 ()

NOTICE OF APPROVAL





UNITED STATES DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT VERNAL FIELD OFFICE** 170 South 500 East

VERNAL, UT 84078

(435) 781-4400



CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Well No: API No:

KERR MCGEE OIL & GAS LP

NBU 1022-9C1CS

43-047-54568

Location: Lease No: SWNE, Sec. 9, T10S, R22E

UTU-01196B

Agreement:

OFFICE NUMBER:

(435) 781-4400

OFFICE FAX NUMBER:

(435) 781-3420

A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

NOTIFICATION REQUIREMENTS

Location Construction (Notify Environmental Scientist)	-	Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify Environmental Scientist)	-	Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	-	Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to running casing and cementing all casing strings to: <u>blm_ut_vn_opreport@blm.gov</u>
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	-	Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

Page 2 of 8 Well: VBU 1022-9C1CS 7/11/2014

SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

- All new and replacement internal combustion gas field engines of less than or equal to 300 designrated horsepower must not emit more than 2 gms of NO_x per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO_x per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop
 work and contact the Authorized Officer (AO). A determination will be made by the AO as to what
 mitigation may be necessary for the discovered paleontologic material before construction can
 continue.

NBU 1022-9G:

NBU 1022-9C1CS, NBU 1022-9F1CS, NBU 1022-9F2BS, NBU 1022-9G1CS

- KMG will install bird exclusion netting over reserve pits containing water that are left open for more than 30 days to reduce possibility of exposure to hazardous chemicals (BLM 2012b).
- KMG will install bird-excluding devises that prevent the perching and entry of migratory birds on or into its new fired vessel exhaust stacks (BLM 2012b). An infiltration gallery will be constructed in a U.S. Fish and Wildlife Service (USFWS)-approved location. An infiltration gallery is basically a pit or trench dug within a floodplain to a depth below the water table. Water is drawn from the pit rather than from the river directly. If this is not possible, KMG will limit pumping within the river to off-channel locations that do not connect to the river during high spring flows.
- If water cannot be drawn using the measures below, and the pump head will be located in the river channel where larval fish are known to occur, the following measures will apply (BLM 2012b):
- KMG will avoid pumping from low-flow or no-flow areas as these habitats tend to concentrate larval fishes;
- KMG will avoid pumping to the greatest extent possible, during that period of the year when larval fish may be present (approximately April 1 to August 31);
- KMG will avoid pumping, to the greatest extent possible, during the midnight hours (10:00 pm to 2:00 am) as larval drift studies indicate that is a period of greatest daily activity. Dusk is the preferred pumping time as larval drift abundance is lowest.
- o KMG will screen all pump intakes with 3/32-inch mesh material.
- Silt fencing will be used to protect cacti that are within 300 feet and downslope or downwind of surface disturbance. Fencing is intended to prevent sedimentation or dust deposition and will be evaluated for effectiveness by a qualified botanist.
- A qualified botanist will be on site to monitor surface-disturbing activities when cacti are within 300 feet of any surface disturbance.
- Dust abatement (consisting of water only) will occur during construction where plants are closer than 300 feet from surface-disturbing activities.
- Cacti within 300 feet of proposed surface disturbance will be flagged

immediately prior to surface-disturbing activities and flags will be removed immediately after surface-disturbing activities are completed. Leaving cacti flagged for as short a time as possible will minimize drawing attention to the cacti location and reduce potential for theft.

- Pipelines will be sited to maximize distance from adjacent cacti locations.
- Project personnel associated with construction activities will be instructed to drive at a speed limit of 15 miles per hour on unpaved roads and remain in existing roadway ROWs at all times.
- For permanent surface pipelines, KMG will adhere to existing cacti survey/buffer guidelines of 300 feet, or amended guidelines if developed by the BLM and USFWS. In areas where avoidance by 300 feet is not feasible and populations or individuals of *Sclerocactus wetlandicus* are within 50 feet of proposed project components, the following actions will be taken to minimize impacts:
- Prior to construction, flag individual cactus. Once pipe installation is complete, remove the flagging.
- Prior to construction, install protective fencing around the cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.
- A qualified botanist will be present during construction to monitor surface line installation.
- As per discussions and email with the BLM on October 18, 2012, KMG will contribute to the Utah *Sclerocactus* mitigation fund to further study the effects of development on *Sclerocactus wetlandicus* in the Uinta Basin and the effectiveness of current mitigation measures. This contribution will be provided over the first 5 years of project development and in lieu of the required 3—year monitoring described in the Vernal BLM RMP for cacti found within 300 feet of planned surface disturbance that cannot be rerouted. This is consistent with the intent of the RMP for the effects of development to be effectively monitored within the Project Area and to better assess conservation measures to avoid or minimize these impacts in the future.
- The following considerations are required for those wells where KMG deems completion fluid recycling is appropriate based on new well density and topography:
- o Temporary lines associated with recycling of completion water will be sited in existing ROWs. The pressure in the lines is less than 50 pounds per square inch and the lines are constructed of rigid aluminum; therefore, virtually no movement will occur during operation.
- o If surface water completion lines are placed within the footprint of a road disturbance where vegetation does not grow, *Sclerocactus wetlandicus* surveys will not be necessary.
- o A qualified botanist will survey a 50-foot-wide corridor along roads where temporary lines are planned to ensure *Sclerocactus wetlandicus* is not present.
- o If cacti are present within the 50-foot-wide survey corridor and avoidance is necessary (to ensure the line is more than 50 feet away from identified cactus), the new alignment will, if possible, be such that the cacti are topographically higher than the re-aligned line so a potential spill from the line will not impact the identified cacti.
- o If it is not possible to re-align the surface lines to avoid individuals or populations of the *Sclerocactus wetlandicus* that are within 50 feet of surface disturbance, the following actions will be taken to minimize impacts:
- o Prior to construction, KMG will flag individual cacti. Once pipe installation is complete, remove the flagging.
- o Prior to construction, KMG will install protective fencing around the

Page 4 of 8 Well: VBU 1022-9C1CS 7/11/2014

cacti if they are down gradient of the surface pipe. Once pipe installation is complete, remove the protective fencing.

 A qualified botanist will be present during construction to monitor surface line installation.

In addition, through several discussions and meetings in December 2011 and January 2012, KMG/Anadarko committed to the following conservation measures in core conservation areas for Sclerocactus wetlandicus:

- KMG will continue to abide by mitigation measures outlined in the 2010 Programmatic Biological Opinion (BO) if any development is proposed in cactus core conservation areas.
- Avoidance of cactus by 300 feet will take priority in the expansion of pads within the cactus core conservation areas. When the 300-foot buffer cannot be avoided in pad expansion, KMG will notify the USFWS and work with the BLM to determine pad expansion that places a priority on avoiding cactus impacts.
- o KMG will follow existing ROWs and/or roads in constructing new buried pipelines within the cactus core conservation areas. For instance, where a new buried pipeline is unable to follow an existing ROW and/or road and exceeds 600 feet in length, KMG will work with the USFWS and the BLM to determine a route that places a priority on avoiding cactus impacts.
- KMG retains the right to perform necessary maintenance activities on all existing pipelines within the cactus core conservation areas. Maintenance activities on pipelines within cactus core conservation areas will avoid impacts to cactus, to the extent possible.
- o KMG will not create new pads in the cactus core conservation areas without formal Service consultation, with the exception of 15 quarter-quarter sections within the cactus core conservation areas where new pad construction will be allowed as a condition of this consultation, with the following conditions:
- When topographically feasible, expansion of existing well pads will take priority in Level 1 cactus core conservation areas.
- Where feasible, new pads will be placed on or adjacent to existing disturbance (e.g. roads) in the cactus core conservation areas.
- Where topographically feasible, drill mats or similar devices will be used for new well pad development in the cactus core conservation areas.
- o Due to the high value of Level 1 cactus core conservation areas, KMG will notify the Service and work with the BLM (and the BIA if on tribal surface) to determine new pad placement that places a priority on avoiding cactus impacts when in these areas.
- If feasible, new well pad development will not occur in cactus core conservation areas located in the northeast corner of the Project Area (e.g. the population located in T8S R23E and the northern portion of T9S R23E)
- KMG will fund a study in the amount of \$100,000 in addition to typical expenditures for pad reclamation, to evaluate the technical feasibility of re-planting the Uinta Basin hookless cactus during pad reclamation activities. KMG will be allowed to review and provide input to the study work plan prior to study implementation and will be given an opportunity to review study results prior to submittal of results for publication. KMG will exercise no control over final study design or study results submitted for publication

Page 5 of 8 Well: VBU 1022-9C1CS 7/11/2014

DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

SITE SPECIFIC DOWNHOLE COAs:

apd_coa Downhole _Anad(_Kerr)

- Surface casing cement shall be brought to surface.
- Production casing cement shall be brought 400' up and into the surface casing.
- A variance is granted for Onshore Order #2 Drilling Operations III. E. "Blooie line discharge 100 feet from well bore and securely anchored" Blooie line can be 75 feet.

All requirements will be adhered to covering air/gas drilling operations as described in Onshore Order #2 III. E. 1. Drilling Operations, Special Drilling Operations, air/gas drilling.

```
applicable wells:
_Anad(_Kerr)

UTU-01196B
1022-9G
NBU

1022-9C1CS 1022-9F1CS 1022-9F2BS 1022-9G1CS
1022-9G (Existing_Well: NBU 292)

1022-9C1CS
1022-9F1CS
1022-9F1CS
1022-9F2BS
1022-9G1CS
```

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily

Page 6 of 8 Well: VBU 1022-9C1CS 7/11/2014

drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and <u>NOT</u> by the rig pumps. Test shall be reported in the driller's log.

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is
 encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal
 Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM,
 Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well by CD (compact disc).
 This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

Page 7 of 8 Well: VBU 1022-9C1CS 7/11/2014

OPERATING REQUIREMENT REMINDERS:

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.
- Should the well be successfully completed for production, the BLM Vernal Field office must be
 notified when it is placed in a producing status. Such notification will be by written communication
 and must be received in this office by not later than the fifth business day following the date on
 which the well is placed on production. The notification shall provide, as a minimum, the following
 informational items:
 - Operator name, address, and telephone number.
 - Well name and number.
 - Well location (¼¼, Sec., Twn, Rng, and P.M.).
 - Date well was placed in a producing status (date of first production for which royalty will be paid).
 - o The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
 - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
 - Unit agreement and/or participating area name and number, if applicable.
 - Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be
 reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported
 verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will
 be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of
 Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid,

Page 8 of 8 Well: VBU 1022-9C1CS 7/11/2014

and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office
 Petroleum Engineers will be provided with a date and time for the initial meter calibration and all
 future meter proving schedules. A copy of the meter calibration reports shall be submitted to the
 BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid
 hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall
 be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering
 lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a
 suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be
 obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
 equipment shall be removed from a well to be placed in a suspended status without prior approval
 of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior
 approval of the BLM Vernal Field Office shall be obtained and notification given before resumption
 of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

Sundry Number: 63743 API Well Number: 43047545680000

	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURC DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 01196-B
SUNDR	RY NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	oposals to drill new wells, significantly or reenter plugged wells, or to drill horizon n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 1022-9C1CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	NSHORE, L.P.		9. API NUMBER: 43047545680000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18tl	h Street, Suite 600, Denver, CO, 80217	PHONE NUMBER: 73779 720 929-6	9. FIELD and POOL or WILDCAT: 1NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1687 FNL 2309 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: SWNE Section: (HIP, RANGE, MERIDIAN: 09 Township: 10.0S Range: 22.0E Merid	lian: S	STATE: UTAH
11. CHEC	K APPROPRIATE BOXES TO INDICAT	TE NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
✓ SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
6/1/2015	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT	WATER SHUTOFF		
Report Date:		SI TA STATUS EXTENSION	APD EXTENSION
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
Spud well 06/01/20 X .250 wall co	COMPLETED OPERATIONS. Clearly show a 15 @ 10:00. Drill 24" conduinductor pipe, cement with 8 spud date and surface casi	ctor hole to 40', run 14" 1 sacks ready mix.	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY June 03, 2015
NAME (PLEASE PRINT) Doreen Green	PHONE NUMB 435 781-9758	ER TITLE Regulatory Analyst II	
SIGNATURE N/A		DATE 6/3/2015	
13/ <i>1</i> 7		U/U/2010	

Sundry Number: 67200 API Well Number: 43047545680000

	STATE OF UTAH			FORM 9
ı	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 01196-B
SUNDR	RY NOTICES AND REPORTS	ON WEI	LLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	posals to drill new wells, significantly reenter plugged wells, or to drill horiz n for such proposals.			7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well				8. WELL NAME and NUMBER: NBU 1022-9C1CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.			9. API NUMBER: 43047545680000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 8021	PHONE NU 17 3779		9. FIELD and POOL or WILDCAT: 1NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1687 FNL 2309 FEL				COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH	HIP, RANGE, MERIDIAN: 09 Township: 10.0S Range: 22.0E Mer	ridian: S		STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NATUR	E OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		1	YPE OF ACTION	
	ACIDIZE	ALTER CA	ASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE	TUBING	CHANGE WELL NAME
7,pp. Oximuto dato notic um otali.	CHANGE WELL STATUS	Сомміне	GLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTUE	RE TREAT	☐ NEW CONSTRUCTION
10/22/2015	OPERATOR CHANGE	PLUG AN	D ABANDON	PLUG BACK
SPUD REPORT	✓ PRODUCTION START OR RESUME		ATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION		CK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	☐ VENT OR		WATER DISPOSAL
DRILLING REPORT	WATER SHUTOFF		ATUS EXTENSION	APD EXTENSION
Report Date:		□ SITASTA	ATUS EXTENSION	
	WILDCAT WELL DETERMINATION	☐ OTHER		OTHER:
The NBU 1022-9C	COMPLETED OPERATIONS. Clearly show 1CS well was placed on proppletion. Producing from the	oduction	on 10/22/2015	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY October 26, 2015
NAME (PLEASE PRINT) Jennifer Thomas	PHONE NUM 720 929-6808		E ulatory Specialist	
SIGNATURE N/A		DAT 10/	E 23/2015	

Sundry Number: 67839 API Well Number: 43047545680000

Form 3160-4 (August 2007)	WELL (COMPI	DEPAR BUREAU	TMEN J OF L	T OI ANI		GEMEN'	Т	AND I	OG			5 16	OM	IB No. 1 ires: Jul	PROVED 004-0137 y 31, 2010
		JOIVIPL	ETION	K KE	<u> </u>	IVIFLET	ION KE	PORT	AND	.00				TU01196		
1a. Type of		Oil Well	☑ Gas V			. –	Other	— Dl	. D1-		ec D		6. If	Indian, All	ottee o	r Tribe Name
b. Type of	Completion	Othe	ew Well r	☐ Wor	K OV	er 🔲	Deepen ———	Plug	д Васк	υυ	iff. R	esvr.		nit or CA A		ent Name and No.
2. Name of Operator Contact: JENNIFER THOMAS KERR-MCGEE OIL AND GAS ONSH@RMEail: Jennifer.Thomas@anadarko.com 8. Lease Name and Well No. NBU 1022-9C1CS																
3. Address	P.O. BOX DENVER,		17					Phone No 720-92	o. (include 9-6808	e area	code)		9. A	PI Well No).	43-047-54568
4. Location	of Well (Rep	port locati	on clearly an	d in acc	ordar	nce with Fe	ederal requ	iirements)*					Field and Po		Exploratory FS
At surfa	ce SWNE	1687FN	L 2309FEL	39.966	109 l	N Lat, 109	9.443604	W Lon					11. S	Sec., T., R.,	M., or	Block and Survey
At top p	rod interval r	eported be	elow NEN	IW 469	FNL	2332FWL								r Area Se		0S R22E Mer SLB
At total	depth NEI	VW 488F	NL 2356FW	/L 39.96	6939	9 N Lat, 1	09.44584	41 W Loi	n					INTAH	arisii	UT
14. Date Sp 06/01/2				ate T.D. /20/201		hed		□ D &	Complet A 🙎 2/2015	ed Ready	y to P	rod.	17. E		(DF, KI 41 KB	B, RT, GL)*
18. Total D	epth:	MD TVD	9212 8980		19.	Plug Back	T.D.:	MD TVD	91	54		20. Dej	oth Bri	dge Plug S		MD TVD
21. Type E RADIAI	lectric & Oth CEMENT			un (Subi ' CCL T	mit co	opy of each	1)			'	Was I	vell core OST run? ional Su		🛛 No	☐ Yes	s (Submit analysis) s (Submit analysis) s (Submit analysis)
23. Casing ar	nd Liner Reco	ord (Repo	rt all strings	set in w	ell)						Direct	ionai bu				(Submit unarysis)
Hole Size	Size/G	rade	Wt. (#/ft.)	Top (ME		Bottom (MD)		Cementer epth	No. o	of Sks. of Cem		Slurry (BB		Cement '	Top*	Amount Pulled
24.000		000 STL	36.7		0		10				81					
7.875		525 J-55 500 I-80	28.0 11.6		13 13	256 920					875 1867				2100	
1.013	4.	300 1-00	11.0		13	920	1				1007				2100	
24 75 11	D 1															
24. Tubing Size	Depth Set (M	ID) D	cker Depth	(MD) I	Si	70 De	pth Set (N	(D) E	acker De	nth (M	ID)	Size	Do	pth Set (M	D) T	Packer Depth (MD)
2.375		8621	ickei Deptii	(IVID)	51.	Ze De	pui sei (iv	1D) 1	acker De	pui (ivi	(LD)	Size	De	pui set (M	D)	Tacker Depth (MD)
25. Producii	ng Intervals					2	6. Perfora	tion Reco	ord							
	ormation		Top		Во	ttom	Po	erforated			+	Size		No. Holes		Perf. Status
A)	MESAVE	RDE		7075		9212			7223 T	O 906	52	0.4	10	168	OPE	<u>N</u>
B) C)											+		+			
D)																
	acture, Treat		nent Squeeze	e, Etc.												
]	Depth Interva)62 PUMP 1	1132 RF	31.5.5	SLICKWATI	R 42 BBI		mount and				IESH S	AND		
-	12	23 10 90	702 T CIVII T	1102 DE	000	EIGITT	-11, 42 001	20 10/01	IOL MOID,	20070	O LDC	3 00/00 IV	ILOITO	,,,,,,,		
20.5.1.1																
Date First	on - Interval	A Hours	Test	Oil	- 1	Gas	Water	Oil Gi	ravity		Gas		Producti	on Method		
Produced	Date	Tested	Production	BBL		MCF	BBL	Corr.			Gravity		Trouden		NO ED	OM WELL
10/22/2015 Choke	11/13/2015 Tbg. Press.	Csg.	24 Hr.	6.0 Oil	- ,	914.0 Gas	313.0 Water	Gas:C	Pil		Well St	atus		FLU	NO FR	OM WELL
Size 20/64		Press. 1017.0	Rate	BBL 6		MCF 914	BBL 313	Ratio				GW				
	tion - Interva															
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL		Gas MCF	Water BBL	Oil Gi Corr.			Gas Gravity		Producti	on Method		
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL		Gas MCF	Water BBL	Gas:C Ratio	Pil		Well St	atus	I			

⁽See Instructions and spaces for additional data on reverse side)
ELECTRONIC SUBMISSION #324180 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

28b. Prod	luction - Interv	al C										
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	y	Gas Gravit	у	Production Method	
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio		Well S	Status	<u>l</u>	
28c Prod	luction - Interv	al D		<u> </u>								
Date First	Test	Hours	Test	Oil	Gas	Water	Oil Gravity	y	Gas		Production Method	
Produced	Date	Tested	Production	BBL	MCF	BBL	Corr. API		Gravit			
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio		Well S	Status		
	osition of Gas(, TURED	Sold, used	l for fuel, vent	ed, etc.)	•	•	•					
30. Sumn	nary of Porous	Zones (Ir	nclude Aquife	rs):						31. For	rmation (Log) Markers	
tests,						d intervals and en, flowing and						
	Formation		Тор	Bottom	ı	Descriptio	ons, Conten	its, etc.			Name	Тор
			1								DEEN DIVED	Meas. Depth
32. Addit	ional remarks	(include p	olugging proce	edure):						BIF MA WA	REEN RIVER RDS NEST AHOGANY MARKER ASATCH ESAVERDE	1257 1604 2065 4615 7075
22 Ci1	e enclosed atta	-1										
	e enciosed atta- ectrical/Mecha		s (1 full set re	a'd.)		2. Geologic	Report		3	DST Re	port 4 Direc	tional Survey
	ndry Notice fo			_	n	6. Core Ana	_			Other:	port 4. Birec	atonai Buivey
	•	1 00 1										
34. I here	by certify that	the forego	-			-					e records (see attached instru	ctions):
			Electr 1	onic Subn For KERR	nission #3: R-MCGEE	24180 Verified E OIL AND GA	d by the Bl AS ONSH	LM Well I ORE, sen	nform t to the	ation Sy e Vernal	ystem. I	
Name	e(please print)	JENNIFI	ER THOMAS	3			Т	itle <u>REG</u>	JLATO	ORY SP	ECIALIST III	
Signa	ture	(Electror	nic Submissi	on)			Б	Date <u>11/19</u>	/2015			
Title 18 U	J.S.C. Section ited States any	1001 and false, fict	Title 43 U.S.0 titious or frad	C. Section ulent stater	1212, mak nents or re	te it a crime for epresentations a	r any person as to any m	n knowing atter within	ly and n its ju	willfully risdiction	to make to any department on.	or agency

Sundry Number: 67839 API Well Number: 43047545680000

				U	S ROC	KIES RE	EGION	
				Opera	tion S	Summa	ry Report	
Well: NBU 1022	2-9C1CS YELLOW						Spud date: 6/2	21/2015
Project: UTAH-U	JINTAH		Site: NBU	1022-90	S PAD			Rig name no.: PROPETRO 12/12, ENSIGN 145/145
Event: DRILLIN	G		Start date	: 5/1/201	5			End date: 8/21/2015
Active datum: R	KKB @5,241.00usft	above Mean S	ea	UWI: S\	W/NE/0/1	0/S/22/E/9	0/0/0/26/PM/N/10	687/E/0/2309/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation
6/1/2015	10:00 - 11:00	1.00	DRLCON	2	Α	Р	9	DRILL 24" CONDUCTOR HOLE TO 40'
	11:00 - 12:00	1.00	DCSGCON	12	E	Р	49	SET 14" CONDUCTOR CASING AND CEMENT WITH 81 SX CEMENT
6/21/2015	7:00 - 10:30	3.50	MIRU	01	С	Р	53	RIG DOWN, SKID RIG 20 FT AND RIG UP, SET MATTING BOARD, SET RIG IN PLACE ON NBU 1022-9C1CS WELL 4 OF 4, JSA, RIG UP FLOW AND MUD LINES, REVIEW DIRECTIONAL PLANS AND PLATS AND VERIFY LAT/LONGS, VERIFY DIRECTIONAL DRILLERS PLAN IS THE MOST RECENT AND APPROVED VERSION REFERENCE WELLBORE DIAGRAMS FOR EXACT CASING DESIGN AND GENERAL OVERVIEW OF WELLBORE PRIOR TO SPUD.
	10:30 - 11:00	0.50	MIRU	06	Α	Р	53	PICK UP NOV 1.83 DEGREE BENT MOTOR (RUN # 4) .17 REV/GAL PICK UP 12.25" DRILL BIT. PICK UP ROTATING HEAD.
	11:00 - 12:30	1.50	DRLSUR	02	В	P	53	DRILL 12.25" HOLE F/ 44' T/ 210'@ (83'PH) WEIGHT ON BIT 25 K STROKES PER MINUTE = 120 GALLONS PER MINUTE = 491 PRESSURE ON/OFF (BOTTOM) 560/460 ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROTATE 25/25/25 K. DRAG 0 K. CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES
	12:30 - 14:30	2.00	DRLSUR	06	A	Р	219	PRE JOB SAFETY MEETING, CIRC 15 MINUTES AND, TRIP OUT TO CHANGE ASSEMBLY. BREAK 12 1/4" BIT. MAKE UP REED-NOV 11" BIT. PICK UP 8" DIRECTIONAL ASSEMBLY SCIBE MOTOR. INSTALL EM TOOL AND TRIP IN HOLE.
	14:30 - 16:30	2.00	DRLSUR	02	D	Р	219	DRILL 11" SURFACE HOLE F/ 210' T/ 550' (340'@ 170'PH). WEIGHT ON BIT 18-25 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 900 / 650. ROTARY RPM 55 MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 62/55/62 K. DRAG 0K. DIRECTIONAL PLAN CURRENTLY 7' ft HIGH, 2' ft RIGHT SLIDE 56 ft @ 0.58Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES

11/16/2015 10:41:15AM 1

<u> Sundry Number: 67839 API Well Number: 43047545680000</u> **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea P/U Date Phase Time Duration Code Sub MD from Operation Start-End (hr) Code (usft) 16:30 - 17:30 DRLSUR 80 Χ 559 *** RIG REPAIR, HYDRALIC HOSE 1.00 Α 17:30 - 18:00 Р 0.50 0 559 **DRLSUR** 23 PRE TOUR SAFETY MEETING 18:00 - 20:30 2.50 DRLSUR 80 559 *** RIG REPAIR, HYDRALIC HOSE Α Х 20:30 - 0:00 3.50 **DRLSUR** 02 D Р 559 DRILL 11" SURFACE HOLE F/550' T/ 910'(360'@ 102.85'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 **GALLONS PER MINUTE=491** PRESSURE ON/OFF(BOTTOM) 800 / 600 **ROTARY RPM 55 MOTOR RPM 83** TOTAL RPM 138 UP/DOWN/ ROT 62/57/60 K. DRAG 2K DIRECTIONAL PLAN CURRENTLY 7.58' ft HIGH, 5.28' **ftRIGHT** SLIDE 130 ft @ 1.33Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 6/22/2015 0.00 - 5:30 5.50 **DRLSUR** 02 D Р 919 DRILL 11" SURFACE HOLE F/910' T/ 1,360'(450'@ 81.8'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 **GALLONS PER MINUTE=491** PRESSURE ON/OFF(BOTTOM) 800 / 600 **ROTARY RPM 55** MOTOR RPM 83 TOTAL RPM 138 UP/DOWN/ ROT 75/52/62 K. DRAG 13K DIRECTIONAL PLAN CURRENTLY 8.3' ft HIGH, 0.35' ft RIGHT SLIDE 165' ft @ 2.58Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS NO HOLE ISSUES 5:30 - 6:00 0.50 **DRLSUR** 23 0 1369 PRE TOUR SAFETY MEETING 6:00 - 12:00 DRLSUR 02 D 1369 6.00 DRILL 11" SURFACE HOLE F/1,360' T/ 1,840'(480'@ 80'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 **GALLONS PER MINUTE=491** PRESSURE ON/OFF(BOTTOM) 1100 / 800 **ROTARY RPM 55** MOTOR RPM 83

11/16/2015 10:41:15AM 2

TOTAL RPM 138

SLIDE 76 ft @ 0.92 Hrs

OVER BOTH SHAKERS AIR ON @ 1460' CFM 1755

LEFT

UP/DOWN/ ROT 86/62/74 K. DRAG 13K
DIRECTIONAL PLAN CURRENTLY 8 ft HIGH, 4 ft

CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2

CENTRIFUGES DEWATERING. RUNNING VOLUME

Sundry Number: 67839 API Well Number: 43047545680000 US ROCKIES REGION **Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea Date P/U Time Duration Phase Code Sub MD from Operation Start-End (hr) Code (usft) 12:00 - 17:30 5.50 DRLSUR 02 Ρ 1849 D DRILL 11" SURFACE HOLE F/1,840' T/ 2,260'(420'@ 76.3'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 **GALLONS PER MINUTE=491** PRESSURE ON/OFF(BOTTOM) 1080 / 900 **ROTARY RPM 55 MOTOR RPM 83 TOTAL RPM 138** UP/DOWN/ ROT 90/69/76 K. DRAG 14K DIRECTIONAL PLAN CURRENTLY 8.' ft HIGH, 2.42' ft SLIDE 105' ft @ 1.08Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS AIR ON @ 1460' CFM 1755 17:30 - 18:00 0.50 **DRLSUR** 23 0 2269 PRE TOUR SAFETY MEETING 18:00 - 23:00 D Р 5.00 **DRLSUR** 02 2269 DRILL 11" SURFACE HOLE F/ 2,260' T/ 2,585'(745'@ 149'PH) WEIGHT ON BIT 15-20 K STROKES PER MINUTE=120 GALLONS PER MINUTE=491 PRESSURE ON/OFF(BOTTOM) 1500 / 1300 **ROTARY RPM 55** MOTOR RPM 83 **TOTAL RPM 138** UP/DOWN/ ROT 98/65/80 K. DRAG 18K DIRECTIONAL PLAN CURRENTLY 13.6' ft HIGH, 2.1' ft LEFT SLIDE 95' ft @ 1.67Hrs CIRCULATE CLOSED LOOP SYSTEM WITH 8.5# WATER RUNNING VOLUME THROUGH 2 CENTRIFUGES DEWATERING. RUNNING VOLUME OVER BOTH SHAKERS, AIR ON @ 1460' CFM 1755 TD @ 2585' @ 11:00 P.M. ON 6/22/2015 23:00 - 0:00 1.00 **CSGSUR** 05 C 2594 CIRCULATE AND CONDITION HOLE, VOLUME IS CLEAN COMING OVER SHAKERS, 600 BBLS H20 ON LOCATION FOR DRILLING BBLS H20 ON LOCATION FOR CEMENT - 1:00 6/23/2015 0:00 1.00 **CSGSUR** 05 С Р 2594 CIRCULATE AND CONDITION HOLE, VOLUME IS CLEAN COMING OVER SHAKERS, 600 BBLS H20 ON LOCATION FOR DRILLING BBLS H20 ON LOCATION FOR CEMENT 1:00 - 2:00 **CSGSUR** 1.00 06 Α 2594 TRIP OUT OF HOLE (7JTS), LAY DOWN DRILL STRING, BHA, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT. 2:00 - 5:00 3 00 2594 ***TOP DRIVE CABLE BAD. CHANGING OUT CABLE. **CSGSUR** 08 Х Α 5:00 - 5:30 0.50 **CSGSUR** Ρ 2594 06 Α TRIP IN HOLE (7JTS), TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BHA, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT.

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- 6:00

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CSGSUR

PRE TOUR SAFETY MEETING

Sundry	y Numbe	r: 678	39 Z	APT We	11 1	Iumbe	r: 4	3047545	680000		
					U	S ROC	KIES RI	EGION			
					Opera	tion S	umma	ary Report			
Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015											
Project: UTAH-I	UINTAH			Site: NBL	J 1022-90	PAD			Rig name no.: PROPETRO 12/12, ENSIGN 145/145		
Event: DRILLING Start date: 5/1/2015						5			End date: 8/21/2015		
Active datum: F Level)	e datum: RKB @5,241.00usft (above Mean Sea								887/E/0/2309/0/0		
Date	Time Start-E		ation nr)	Phase	Code	Sub Code	P/U	MD from (usft)	Operation		
	6:00 -	11:00 5.	00	CSGSUR	06	A	Р	2594	TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BHA, LAY DOWN DIRECTIONAL TOOLS, MOTOR, AND, BIT.		
	11:00 - 1	12:00 1.	00	CSGSUR	12	Α	Р	2594	MOVE CAT WALK & PIPE RACKS, PJSM , R/U TO RUN 8.625 CSG		
	12:00 - /	15:00 3.	00	CSGSUR	12	С	Р	2594	RUN 58 JOINTS OF 8-5/8" 28# J-55 LT&C CASING. RAN 1 CENTRALIZER ON FIRST THREE JOINTS, AND EVERY TWO JOINT FOR 2 JOINTS FOR A TOTAL OF 5 CENTRALIZERS. RUN CASING TO BOTTOM WITH NO PROBLEMS. LANDED FLOAT SHOE @ 2,557' SET TOP OF BAFFLE PLATE @ 2,511' (CLEAN PITS)		

11/16/2015 10:41:15AM 4

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea Date P/U Time Duration Phase Code MD from Operation Sub Start-End (hr) Code (usft) 15:00 - 17:30 2.50 **CSGSUR** 12 Ρ 2594 В PRE JOB SAFETY MEETING WITH PRO PETRO CEMENTERS. RIG UP AND INSTALL CEMENT HEAD. START CEMENT OPERATIONS. PRESSURE TEST LINES TO 1000 PSI. PUMP 140 BBLS H2O AND PUMP 20 BBLS OF 8.4# GEL WATER AHEAD. MIX AND PUMP (300 SX) 61.4 BBLS OF 15.8# 1.15 YP 5 GAL/SK PREMIUM CEMENT W/ 2% CALC. DROP PLUG ON FLY. DISPLACE W/ 156.7 BBLS OF H20. NO CIRC THROUGH OUT. FINAL LIFT OF 180 PSI AT 4 BBL/MIN. BUMP PLUG WITH 550 PSI FOR 5 MIN. FLOAT HELD. RIGGED DOWN CEMENT HEAD, PICKED UP LANDING JOINT, PULLED BUSHINGS, PULLED DIVERTER RUBBER, SET ELEVATORS, CASING LANDED ON CONDUCTOR, RUN 200' OF 1" PIPE DOWN BACK SIDE OF 8.5/8" CASING ANNULUS, R/D PROPETRO RIG, RELEASED RIG @ 21:00 HRS 6/23/15 TOP JOB # 1: PUMP CEMENT DOWN ONE INCH PIPE WITH 100 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 20.4 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE. TOP JOB # 2: PUMP CEMENT DOWN ONE INCH PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 30.7 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE. TOP JOB # 3: PUMP CEMENT DOWN ONE INCH PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 30.7 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE. TOP JOB # 4: PUMP CEMENT DOWN ONE INCH PIPE WITH 100 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 20.5 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO CEMENT TO SURFACE. TOP JOB # 5: PUMP CEMENT DOWN ONE INCH PIPE WITH 75 SX PREMIUM CEMENT WITH 4% CACL2 & .25 LB/SX FLOCELE. 15.3 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. CEMENT TO SURFACE AND STAYING RELEASE CEMENTERS @ 02:00 6/24/2015. 17:30 - 18:00 0.50 **CSGSUR** 23 0 Р 2594 PRE TOUR SAFETY MEETING 18:00 - 21:00 3.00 **CSGSUR** 01 Ε Р 2594 HRSPRE JOB SAFETY MEETING WITH JD TRUCKING. STALLION CREW, CREW, RIG DOWN CAMPS, MOVE TO NBU 1099-9J1CS, 1 BED TRUCKS, 2 HAUL TRUCKS, 1 TRUCK PUSHER, 1 SWAMPER, 1 ROUSTABOUT. RELEASE RIG @ 21:00 6/23/2015 8/17/2015 3:00 - 4:30 1.50 MIRU3 01 С 2594 SKID RIG TO NBU 1022-9C1CS - 5:30 4:30 1.00 PRPSPD 14 Α Ρ 2594 NIPPLE UP B.O.P'S & RIG UP ROTARY TOOLS

11/16/2015 10:41:15AM 5

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea P/U Date Time Duration Phase Code Sub MD from Operation Start-End (hr) Code (usft) 5:30 - 9:00 3.50 **CSGSUR** 15 Ρ 2594 Α SAFETY MEETING WITH CREW, TEST BOP WITH A-1 TEST ANNULAR TO 250 PSI LOW/ 5 MIN 2500 PSI HIGH 10 MIN, PIPE & BLIND RAMS, FLOOR VALVES, IBOP, HCR VALVE, KILL LINE VALVES, TEST BOPS, CHOKE MANIFOLD TO 250 PSI LOW / 5 MIN - 5000 PSI HIGH / 10 MIN, HOLD ACCUMULATOR FUNCTION TEST, & TEST SURFACE CASING 1500 PSI FOR 30 9:00 - 9:30 0.50 **CSGSUR** 14 В Ρ 2594 SET WEAR BUSHING &CHANGE OUT SAVER SUB 9:30 - 12:00 2.50 **CSGSUR** 09 Α Р 2594 SLIP CUT DRILL LINE 12:00 - 15:00 3.00 **CSGSUR** Р 2594 PICK UP BHA & T.I.H TAG CEMENT @ 2430 06 Α 15:00 - 15:30 0.50 **CSGSUR** 2594 DRILLED SHOE TRACK, FC @ 2,516', SHOE@ 2,562 & CLEAN OUT HOLE TO 2,594' 15:30 - 0:00 8.50 **DRLPRC** 02 Ρ 2594 D DIRECTIONAL DRILL 7.875 HOLE F/ 2594, TO 3858' (1264' / 8.50 HR @148.7'/FPH AVG) WEIGHT ON BIT = 10-18 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =84 TOP DRIVE RPM = 30 - 50 TOTAL RPM = 141 FT/LBS TORQUE = 9 - 19K STPP = 1850 STAND OFF BOTTOM = 1530 STRING WEIGHT UP/DOWN/ROTATING = 135 / 98 / Slide 237' @ 18.75% Depth/29.04% Time = 2.2 Hrs -Rot 1027' @ 81.25% Depth/ 70.96% Time =5.42 Hrs/ Bit Hrs = 7.64 / D&C Hrs = 8.47 MUD WEIGHT = 8.5 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB

8/18/2015

- 0:30

0.50

DRLPRC

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RECEIVED: Nov. 19, 2015

RIG SERVICE TOP DRIVE DRAW TOOL, CAT WALK

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea Date P/U Time Duration Phase Code Sub MD from Operation Start-End (hr) Code (usft) 0:30 - 12:00 11.50 DRLPRC 02 D Ρ 3858 DIRECTIONAL DRILL 7.875 HOLE F/ 3858' TO 5576' (1718' / 149.3 HR @148.7'/FPH AVG) WEIGHT ON BIT = 10-18 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =84 TOP DRIVE RPM = 30 - 50 TOTAL RPM = 141 FT/LBS TORQUE = 15 - 24K STPP STAND = 2550 OFF BOTTOM = 2100 STRING WEIGHT UP/DOWN/ROTATING = 200 / 120 / 13' North / 3' West Slide 158' @ 9.19% Depth / 25.83% Time = 2.58 Hrs - Rot 1560' @ 90.81 Depth / 74.17% Time = 1.93 Hrs / Bit Hrs = 10.00 / D&C hrs = 10.00 MUD WEIGHT = 8.5 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB 12:00 - 12:30 5576 0.50 DRLPRC 07 SERVICE RIG 12:30 - 0:00 **DRLPRO** В Р 5576 11.50 02 DIRECTIONAL DRILL 7.875 HOLE F/5576' TO 7266' (1690' / 11.5 HR @146.9'/FPH AVG) WEIGHT ON BIT = 10-18 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =84 TOP DRIVE RPM = 30 - 50 TOTAL RPM = 141 FT/LBS TORQUE = 15 - 24K STPP STAND = 2801 OFF BOTTOM = 2348 STRING WEIGHT UP/DOWN/ROTATING = 210 / 126 / 16' North / 7.5' West Slide 60' @ 3.55% Depth / 11.07% Time = 1.13 Hrs -Rot 1630' @ 80.93% Depth / 80.93% Time = 9.10 Hrs / Bit Hrs = 27.87 / D&C hrs = 28.70 MUD WEIGHT = 8.7 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH

11/16/2015 10:41:15AM 7

RECEIVED: Nov. 19, 2015

VISCOSITY SWEEPS WITH CALCARB

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea Date P/U Time Duration Phase Code MD from Operation Sub Start-End (hr) Code (usft) 0:00 8/19/2015 - 10:30 10.50 DRLPRO 02 Ρ 7266 В DIRECTIONAL DRILL 7.875 HOLE F/ 7266' TO 8477' (1211' / 10.5 HR @115.3'/FPH AVG) WEIGHT ON BIT = 15/24 K STROKES PER MINUTE - 158 GALLONS PER MINUTE = 600 MUD MOTOR RPM =84 TOP DRIVE RPM = 30 - 50 TOTAL RPM = 141 FT/LBS TORQUE = 15 - 24K STPP STAND = 2801 OFF BOTTOM = 2348 STRING WEIGHT UP/DOWN/ROTATING = 210 / 126 / 4' North / 7' West Slide 20' @ 1.65% Depth / 8.21% Time = .77 Hrs -Rot 1193' @ 98.35% Depth / 91.79% Time = 8.57 Hrs / Bit Hrs = 37.20 / D&C hrs = 38.03 MUD WEIGHT = 8.7 PPG VISCOSITY = 26 SECONDS HOLE IN GOOD CONDITION ZECO - DEWATERING CENTRIFUGE - RUNNING DE-SANDER - RUNNING DRILLING WITH GYPSUM SYSTEM MIXING HIGH VISCOSITY SWEEPS WITH CALCARB 10:30 - 13:30 3 00 DRI PRO 05 G 8477 PUMPED GEL SWEEPS WITH 14# CALCARB & DISPLACED THE DIRTY WATER WITH 12.0 PPG 42 VIS MUD. & STARTED WITH 80 BBLS 11.8 PPG MUD & 14 # CAL CARB &,GOT MUD BACK TO SURFACE WITH PARCAL RETURNS & BY PASS SHAKER & RAISE LCM UP TO 14% REGAIN FULL CIRC & BUILD VOLMUME.RESUME DRILLING & LOST TOTAL OF 390 BBLS. 11.6 PPG WITH 14% LCM VIS 38 13:30 - 19:30 6.00 DRLPRO 8477 DIRECTIONAL DRILL 7.875 HOLE F/8477' TO 8805" MD (328' / 6 HR @54.6'/FPH AVG) WEIGHT ON BIT = 10-25 K STROKES PER MINUTE - 120 GALLONS PER MINUTE = 460 MUD MOTOR RPM =73 TOP DRIVE RPM = 30 - 50 TOTAL RPM = 141 FT/LBS TORQUE = 15 - 24K STPP STAND = 2648 OFF BOTTOM = 2482 STRING WEIGHT UP/DOWN/ROTATING = 245 / 139 / 166 3' North / .4' East of center target Slide 0' @ 0% Depth / 0% Time = 0 Hrs - Rot 325' @ 100% Depth / 100% Time = 6.05 Hrs / Bit Hrs = 43.25 / D&C Hrs = 43.25 MUD WEIGHT = 11.9 PPG VISCOSITY = 40 SECONDS 12% I CM HOLE IN GOOD CONDITION ZECO -NOT **DEWATERING CENTRIFUGE - NOT RUNNING** DE-SANDER - RUNNING (PUMP NUT HAULS / SWEEPS TO CLEAN BIT MADE CALLS AND PREP FOR TRIP OUT FOR NEW BHA) 19:30 - 20:30 1.00 **DRLPRO** 05 С Р 8805 CIRC HOLE CLEAN BULD DRY JOB, PREP RIG FLOOR FOR TRIP.CIRC @ 460 GPM 120 SPM. MUD WEIGHT = 11.9 PPG VISCOSITY = 40 SECONDS 12% LCM

11/16/2015 10:41:15AM 8

Sundry Number: 67839 API Well Number: 43047545680000 US ROCKIES REGION **Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea P/U Date Phase Time Duration Code Sub MD from Operation Start-End (hr) Code (usft) 20:30 - 0:00 3.50 DRLPRO Ρ 8805 06 Α HPJSM TRIP OUT OF THE HOLE FROM 8805' MD TO 4,563' MD @ 00:00 8/20/2015 0:00 - 6:00 6.00 **DRLPRO** 06 Р 8805 Α TRIPPED OUT OF THE HOLE FROM 8805' MD STOOD BACK THE DIRECTIONAL ASSY. AND LAYED DOWN THE MUD MOTOR / BIT. WE HAD STICKY FORMATION @ 4,560' TRIP OUT AND LAY DOWN M.M / BIT HPJSM PICK UP NEW M.M/BIT SCRIBE TOOLS. INSTALL ROT RUBBER. 6:00 - 11:00 5.00 DRLPRO 8805 06 HPJSM WITH HANDS TRIP IN HOLE TO 8,550' MD 11:00 - 12:00 1.00 **DRLPRO** 03 Ε Р 8805 WASH FROM 8,550 TO 8,805 & FANNED & CLEAN BTM UP 12:00 - 17:30 5.50 DRLPRO 8805 02 Р В DIRECTIONAL DRILL 7.875 HOLE F/ 8805' TO 9212 MD (407' / 5.5 HR @74.0'/FPH AVG) WEIGHT ON BIT = 10-25 K STROKES PER MINUTE - 105 GALLONS PER MINUTE = 400 MUD MOTOR RPM =64 TOP DRIVE RPM = 30 - 45 TOTAL RPM = 99 FT/LBS TORQUE = 15 - 22K STPP STAND = 2500 OFF BOTTOM = 2120 STRING WEIGHT UP/DOWN/ROTATING =240/136/162 Slide 0' @ 0% Depth / 0% Time = 0 Hrs - Rot 408' @ 100% Depth / 100% Time = 4.65 Hrs / Bit Hrs = 4.65 / D&C Hrs = 5.90 MUD WEIGHT = 12.2 PPG VISCOSITY = 39 SECONDS 14% LCM HOLE IN GOOD CONDITION ZECO -NOT **DEWATERING CENTRIFUGE - NOT RUNNING** DE-SANDER - RUNNING 17:30 - 19:00 Р 1.50 **CSGPRO** 05 Α 9212 CIRC BOTTOM UP TWICE 19:00 - 0:00 5.00 **CSGPRO** 06 D Р 9212 T.O.H FOR RUN CASING FROM 9212' MD TO 2506' MD @ 00:00 8/21/2015 0:00 - 2:00 2 00 **CSGPRO** 06 D Р 9212 T.O.H FOR RUN CASING FROM 2506' MD TO DIR TOOLS TIGHT SPOT @4,580' MD 2:00 - 2:30 0.50 **CSGPRO** 06 Р 9212 HPJSM LAY OUT DIR TOOL'S DRAIN MUD MOTOR, BREAK BIT 2:30 - 3:00 0.50 В 9212 **CSGPRO** 14 Р HPJSM PULL WEAR BUSHING, FILL HOLE 3:00 - 4:00 1.00 **CSGPRO** 12 Α Р 9212 HELD SAFETY MEETING WITH RIG CREW AND, ALL THIRD PARTY'S ON LOC. TALKED ABOUT, RUNNING 4.5 CASING. RIG UP FRANKS CASING CREW. 4:00 9212 - 15:00 11.00 **CSGPRO** 12 C SAFETY MEETING WITH FRANKS AND RAN TOTAL

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9212

15:00 - 16:00

1.00

CSGPRO

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OF 207 JOINTS OF 4.5" I-80 CASING = (93 JOINTS 4.5" / 11.6# I-80 / LTC CASING + 1- MARKER JOINT) + (114 JOINTS 4.5" / 11.6# I-80 / DQX CASING + 1-MKR & 1 CROSS OVER) SHOE @ 9199.65', FLOAT COLLAR @ 9,153.95', MESA VERDE MARKER @

6853.0' & RIG DOWN CASING CREW

CIRC BTM UP OFF CASING

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Spud date: 6/21/2015 Well: NBU 1022-9C1CS YELLOW Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: PROPETRO 12/12, ENSIGN 145/145 **Event: DRILLING** End date: 8/21/2015 Start date: 5/1/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea Date P/U Phase Time Duration Code Sub MD from Operation Start-End (hr) Code (usft) 16:00 - 19:00 3.00 **CSGPRO** 05 D Ρ 9212 SAFETY MEETING WITH SCHLUMBERGER PRESSURE TEST TO 5000 PSI. PUMP 5 BBLS OF WATER SPACER, FOLLOWED BY 30 BBL. CHEMICAL, . DROPPED THE BOTTOM PLUG AND PUMPED 190.8 BBLS (777 SX) OF CLASS G LEAD CEMENT, 12.8 PPG 1.36 YLD, 53.01 #/SK D035 + 0.10% BWOC D208 + 0.2% BWOC D065 +.20 % BWOC D046 + .25 #/SK D029 + 0.50% BWOC D079 + 0.38 % BWOC D800, 7.028 GL./SK FRESH WATER . FOLLOWED BY 273 BBLS (1090 SX) OF 14.5#, 1.34 YLD. CLASS G POZ TAIL CEMENT + 35.01#/SK D035 + 20.10% BWOC D066 +0.205% BWOC D208 + 0.15 % BWOC D800 + 0.20 % BWOC D046 + 0.30 % BWOC B477 + 5.586 GL/SK FRESH WATER . DISPLACED WITH W/ 142.2 BBLS OF FRESH WATER. FULL RETURNS WITH 32 BBLS OF CEMENT RETURNED TO SURFACE. LIFT PSI OF 2490 / 3286 BUMP PLUG PSI. . PRESSURE HELD 5 MINS. FLOAT HELD. FLOW BACK 2 BBLS. EST TOC OF TAIL CEMENT 4444'. RIG DOWN CEMENTERS 19:00 - 19:30 0.50 **CSGPRO** 12 В Ρ 9212 RIG DOWN THE CEMENT CREW 19:30 - 20:30 Р 1.00 **CSGPRO** В 9212 14 INSTALL THE PACK OFF AND PULL THE LANDING JOINT 20:30 - 21:30 1.00 **RDMO** Ρ 9212 NIPPLE DOWN THE FLOW LINE AND BOP RIG

11/16/2015 10:41:15AM 10

RECEIVED: Nov. 19, 2015

RELEASED @ 21:30 AM 08/21/2015

Sundry Number: 67839 APT Jeon UTAHN WITH (feet), 4 AD24,7 Zoho 6200000

Design: OH



+E/-W 0.00

Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: OH

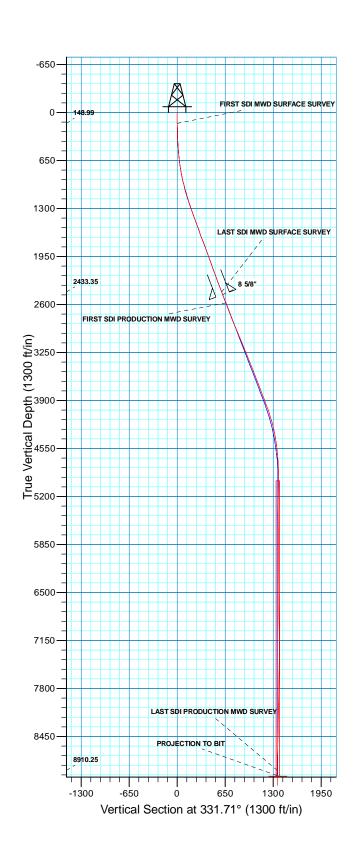


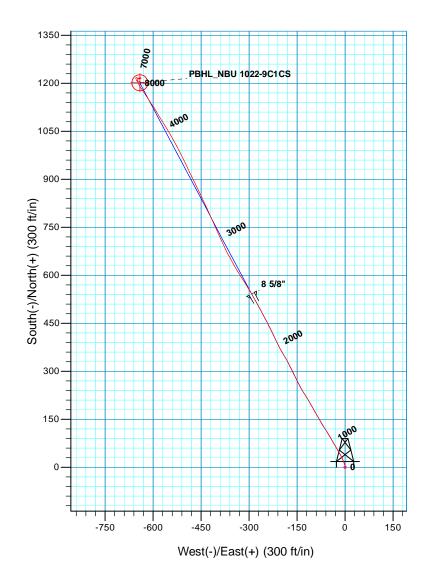




Azimuths to True North Magnetic North: 10.56°

Magnetic Field Strength: 51860.2snT Dip Angle: 65.81° Date: 7/29/2015 Model: BGGM2015





PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N

tic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 9 T10S R22E System Datum: Mean Sea Level

REC



SDI Survey Report



Company: US ROCKIES REGION PLANNING

Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 1022-9G PAD

 Well:
 NBU 1022-9C1CS

Wellbore: OH
Design: OH

Geo Datum: Map Zone: Local Co-ordinate Reference:

TVD Reference: GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

MD Reference: GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

Well NBU 1022-9C1CS

North Reference: True

Survey Calculation Method: Minimum Curvature

Database: Denver Sales Office

Project UTAH - UTM (feet), NAD27, Zone 12N

Map System: Universal Transverse Mercator (US Survey Feet)

NAD 1927 (NADCON CONUS) Zone 12N (114 W to 108 W) System Datum: Mean Sea Level

ivicari Sea Level

Site NBU 1022-9G PAD, SECTION 9 T10S R22E

Site Position: Northing: 14,517,524.

 Site Position:
 Northing:
 14,517,524.49 usft
 Latitude:
 39.9661430

 From:
 Lat/Long
 Easting:
 2,076,714.36 usft
 Longitude:
 -109.4429210

 Position Uncertainty:
 0.00 ft
 Slot Radius:
 13.200 in
 Grid Convergence:
 1.00 °

Well NBU 1022-9C1CS, 2309 FNL 1687 FWL 39.9661430 **Well Position** +N/-S 0.00 ft Northing: 14,517,524.49 usft Latitude: +E/-W 0.00 ft Easting: 2,076,714.36 usft Longitude: -109.4429210 0.00 ft 0.00 ft 5,228.00 ft **Position Uncertainty** Wellhead Elevation: **Ground Level:**

ОН Wellbore **Model Name** Declination Dip Angle Field Strength Magnetics Sample Date (°) (°) (nT) BGGM2015 7/29/2015 10.56 65.81 51,860

ОН Design Audit Notes: ACTUAL Version: 1.0 Tie On Depth: 0.00 Phase: **Vertical Section:** Depth From (TVD) +N/-S +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 331.71

8/24/2015 **Survey Program** Date From То (ft) Survey (Wellbore) **Tool Name** Description 9.00 2,529.00 Survey #1 - SDI MWD SURFACE (OH) SDI MWD SDI MWD - Standard ver 1.0.1 2,683.00 9,212.00 Survey #2 - SDI MWD PRODUCTION (OH SDI MWD SDI MWD - Standard ver 1.0.1

urvey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Depth +N/-S		Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00
	149.00	0.87	22.14	148.99	0.98	0.40	0.68	0.62	0.62	0.00
	FIRST SDI M	WD SURFACE S	SURVEY							
	231.00	1.75	353.11	230.97	2.80	0.48	2.24	1.31	1.07	-35.40
	316.00	2.36	341.18	315.92	5.75	-0.24	5.17	0.87	0.72	-14.04
	400.00	2.55	337.04	399.84	9.11	-1.52	8.74	0.31	0.23	-4.93
	494.00	3.71	339.59	493.70	13.88	-3.40	13.84	1.24	1.23	2.71
	584.00	5.63	337.19	583.40	20.68	-6.13	21.12	2.14	2.13	-2.67
	674.00	7.39	334.82	672.81	29.99	-10.30	31.29	1.98	1.96	-2.63



SDI Survey Report



US ROCKIES REGION PLANNING Company:

Project: UTAH - UTM (feet), NAD27, Zone 12N

Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: ОН Design: ОН

Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference:

Database:

Well NBU 1022-9C1CS

GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145) GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

Minimum Curvature

Survey Calculation Method: Denver Sales Office

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
764.00	9.16	330.55	761.87	41.47	-16.29	44.23	2.08	1.97	-4.74
854.00	11.08	329.55	850.47	55.16	-24.19	60.04	2.14	2.13	-1.11
944.00	12.86	330.62	938.51	71.35	-33.49	78.70	1.99	1.98	1.19
1,034.00	14.53	329.61	1,025.95	89.81	-44.11	99.99	1.87	1.86	-1.12
1,124.00	16.31	328.25	1,112.70	110.30	-56.48	123.89	2.02	1.98	-1.51
1,214.00	17.98	328.25	1,198.70	132.86	-70.44	150.37	1.86	1.86	0.00
1,304.00	19.41	329.72	1,283.95	157.59	-85.29	179.19	1.67	1.59	1.63
1,394.00	20.32	331.52	1,368.60	184.24	-100.28	209.76	1.22	1.01	2.00
1,484.00	21.32	329.03	1,452.72	212.00	-116.15	241.73	1.48	1.11	-2.77
1,574.00	20.01	328.48	1,536.93	239.16	-132.62	273.45	1.47	-1.46	-0.61
1,664.00	18.98	332.77	1,621.77	265.30	-147.37	303.46	1.96	-1.14	4.77
1,754.00	20.14	334.38	1,706.58	292.29	-160.77	333.57	1.42	1.29	1.79
1,844.00	21.46	331.86	1,790.71	320.78	-175.23	365.51	1.77	1.47	-2.80
1,934.00	19.21	330.84	1,875.10	348.23	-190.21	396.79	2.53	-2.50	-1.13
2,024.00	19.35	331.92	1,960.05	374.31	-204.45	426.50	0.43	0.16	1.20
2,114.00	20.02	334.36	2,044.79	401.36	-218.13	456.80	1.18	0.74	2.71
2,204.00	20.66	334.12	2,129.18	429.53	-231.73	488.05	0.72	0.71	-0.27
2,294.00	20.40	332.36	2,213.46	457.71	-245.93	519.60	0.74	-0.29	-1.96
2,384.00	20.58	330.95	2,297.77	485.44	-260.89	551.10	0.58	0.20	-1.57
2,474.00	20.75	331.74	2,381.98	513.31	-276.12	582.86	0.36	0.19	0.88
2,529.00	21.10	331.13	2,433.35	530.56	-285.52	602.51	0.75	0.64	-1.11
LAST SDI M	WD SURFACE S	URVEY							
2,683.00	20.96	327.30	2,577.10	578.02	-313.78	657.69	0.90	-0.09	-2.49
FIRST SDI P	RODUCTION M	ND SURVEY							
2,777.00	20.55	327.99	2,665.00	606.15	-331.61	690.91	0.51	-0.44	0.73
2,872.00	21.25	330.46	2,753.75	635.27	-348.94	724.77	1.18	0.74	2.60
2,966.00	22.27	331.56	2,841.05	665.75	-365.82	759.61	1.17	1.09	1.17
3,061.00	22.25	335.14	2,928.98	697.90	-381.95	795.57	1.43	-0.02	3.77
3,155.00	23.13	336.82	3,015.70	731.02	-396.70	831.72	1.16	0.94	1.79
3,250.00	22.16	336.19	3,103.38	764.57	-411.28	868.17	1.05	-1.02	-0.66
3,345.00	21.68	335.19	3,191.51	796.89	-425.88	903.55	0.64	-0.51	-1.05
3,435.00	22.86	334.70	3,274.79	827.78	-440.32	937.60	1.33	1.31	-0.54
3,526.00	22.54	333.60	3,358.75	859.39	-455.63	972.68	0.58	-0.35	-1.21
3,617.00	21.40	334.79	3,443.14	890.03	-470.46	1,006.69	1.34	-1.25	1.31
3,707.00	21.90	335.40	3,526.79	920.15	-484.44	1,039.84	0.61	0.56	0.68
3,798.00	20.38	333.78	3,611.66	949.80	-498.51	1,072.61	1.79	-1.67	-1.78
3,888.00	21.21	333.31	3,695.80	978.40	-512.74	1,104.55	0.94	0.92	-0.52
3,979.00	21.28	330.57	3,780.62	1,007.49	-528.25	1,137.51	1.09	0.08	-3.01
4,070.00	21.37	331.80	3,865.39	1,036.49	-544.20	1,170.60	0.50	0.10	1.35
4,160.00	19.98	327.25	3,949.59	1,063.87	-560.27	1,202.33	2.36	-1.54	-5.06
4,251.00	19.26	328.46	4,035.31	1,089.74	-576.53	1,232.82	0.91	-0.79	1.33
4,341.00	17.32	329.03	4,120.76	1,113.88	-591.19	1,261.02	2.16	-2.16	0.63
4,432.00	14.61	326.30	4,208.24	1,135.05	-604.53	1,285.98	3.09	-2.98	-3.00



SDI Survey Report



Company: US ROCKIES REGION PLANNING

Project: UTAH - UTM (feet), NAD27, Zone 12N Site: NBU 1022-9G PAD

 Site:
 NBU 1022-9G PAE

 Well:
 NBU 1022-9C1CS

Wellbore: OH
Design: OH

Local Co-ordinate Reference:

TVD Reference: GL 5228

MD Reference: North Reference:

Database:

Survey Calculation Method:

Well NBU 1022-9C1CS

GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

True

Minimum Curvature

Denver Sales Office

/ey									
·									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,522.00	12.47	326.83	4,295.73	1,152.63	-616.15	1,306.97	2.38	-2.38	0.59
4,613.00	10.70	325.39	4,384.88	1,167.80	-626.32	1,325.16	1.97	-1.95	-1.58
4,704.00	8.27	328.46	4,474.63	1,180.34	-634.54	1,340.09	2.73	-2.67	3.37
4,794.00	6.82	326.76	4,563.85	1,190.32	-640.86	1,351.88	1.63	-1.61	-1.89
4,885.00	5.28	336.77	4,654.34	1,198.69	-645.47	1,361.43	2.05	-1.69	11.00
4,976.00	3.52	343.94	4,745.07	1,205.22	-647.90	1,368.33	2.02	-1.93	7.88
5,066.00	1.64	5.82	4,834.97	1,209.16	-648.53	1,372.10	2.32	-2.09	24.31
5,157.00	1.41	17.06	4,925.94	1,211.52	-648.07	1,373.96	0.41	-0.25	12.35
5,247.00		29.29	5,015.92	1,213.39	-647.29	1,375.24	0.40	-0.26	13.59
5,338.00	1.23	47.03	5,106.90	1,214.87	-646.12	1,375.99	0.41	0.05	19.49
5,429.00	0.81	54.57	5,197.88	1,215.91	-644.88	1,376.32	0.48	-0.46	8.29
5,519.00		72.35	5,287.87	1,216.55	-643.52	1,376.23	0.47	0.34	19.76
5,610.00		75.34	5,378.85	1,217.05	-641.80	1,375.86	0.07	0.02	3.29
5,700.00		97.99	5,468.84	1,217.14	-639.97	1,375.07	0.53	0.11	25.17
5,791.00	0 1.31	104.08	5,559.81	1,216.75	-637.99	1,373.78	0.17	0.08	6.69
5,881.00	0.53	217.19	5,649.81	1,216.17	-637.24	1,372.92	1.77	-0.87	125.68
5,972.00	0.87	188.54	5,740.80	1,215.15	-637.60	1,372.19	0.53	0.37	-31.48
6,062.00	1.09	295.32	5,830.79	1,214.84	-638.47	1,372.33	1.75	0.24	118.64
6,153.00	0.83	284.58	5,921.78	1,215.37	-639.89	1,373.48	0.35	-0.29	-11.80
6,243.00	0.84	257.88	6,011.77	1,215.40	-641.17	1,374.11	0.43	0.01	-29.67
6,334.00	0.55	240.01	6,102.76	1,215.04	-642.20	1,374.28	0.39	-0.32	-19.64
6,425.00	0.35	260.69	6,193.76	1,214.78	-642.85	1,374.36	0.28	-0.22	22.73
6,515.00	0.39	260.37	6,283.76	1,214.68	-643.42	1,374.54	0.04	0.04	-0.36
6,606.00	0.26	209.89	6,374.76	1,214.45	-643.83	1,374.53	0.33	-0.14	-55.47
6,696.00	0.44	179.57	6,464.75	1,213.93	-643.93	1,374.12	0.28	0.20	-33.69
6,787.00	0.48	189.29	6,555.75	1,213.20	-643.99	1,373.51	0.10	0.04	10.68
6,878.00	1.67	312.29	6,646.74	1,213.72	-645.03	1,374.46	2.17	1.31	135.17
6,968.00	1.23	306.49	6,736.71	1,215.18	-646.78	1,376.57	0.51	-0.49	-6.44
7,058.00	1.14	311.41	6,826.69	1,216.34	-648.23	1,378.28	0.15	-0.10	5.47
7,149.00	0.88	291.63	6,917.68	1,217.20	-649.56	1,379.67	0.47	-0.29	-21.74
7,240.00	0.70	280.12	7,008.67	1,217.56	-650.75	1,380.55	0.26	-0.20	-12.65
7,330.00	0.79	263.95	7,098.66	1,217.59	-651.91	1,381.12	0.25	0.10	-17.97
7,420.00		271.51	7,188.66	1,217.53	-652.80	1,381.49	0.49	-0.49	8.40
7,511.00	0.35	200.49	7,279.66	1,217.28	-653.18	1,381.45	0.45	0.00	-78.04
7,602.00	0.53	232.22	7,370.65	1,216.76	-653.61	1,381.20	0.33	0.20	34.87
7,692.00	0.53	185.81	7,460.65	1,216.09	-653.98	1,380.78	0.46	0.00	-51.57
7,783.00	0.63	149.97	7,551.65	1,215.24	-653.77	1,379.93	0.41	0.11	-39.38
7,874.00	1.08	171.97	7,642.63	1,213.95	-653.40	1,378.63	0.60	0.49	24.18
7,964.00	0.97	171.93	7,732.62	1,212.36	-653.18	1,377.12	0.12	-0.12	-0.04
8,055.00	1.14	156.19	7,823.61	1,210.77	-652.70	1,375.49	0.37	0.19	-17.30
8,146.00	1.67	142.04	7,914.58	1,208.90	-651.52	1,373.28	0.69	0.58	-15.55
8,236.00		119.10	8,004.55	1,207.46	-649.99	1,371.29	0.90	-0.68	-25.49
8,327.00		112.51	8,095.54	1,206.81	-648.67	1,370.09	0.32	-0.30	-7.24
8,417.00	1.16	107.97	8,185.53	1,206.29	-647.23	1,368.96	0.42	0.41	-5.04



SDI Survey Report



Company: US ROCKIES REGION PLANNING

Project: UTAH - UTM (feet), NAD27, Zone 12N

Site: NBU 1022-9G PAD Well: NBU 1022-9C1CS

Wellbore: OH
Design: OH

Local Co-ordinate Reference:

TVD Reference: MD Reference:

Database:

North Reference: Survey Calculation Method: Well NBU 1022-9C1CS

GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145) GL 5228 & KB 13 @ 5241.00ft (ENSIGN 145)

True

Minimum Curvature
Denver Sales Office

urvey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,508.00	1.60	103.65	8,276.50	1,205.70	-645.12	1,367.44	0.50	0.48	-4.75
8,598.00	1.23	112.07	8,366.47	1,205.04	-643.01	1,365.86	0.47	-0.41	9.36
8,689.00	1.28	103.15	8,457.45	1,204.45	-641.11	1,364.43	0.22	0.05	-9.80
8,779.00	1.76	112.86	8,547.42	1,203.68	-638.86	1,362.69	0.60	0.53	10.79
8,870.00	1.76	116.55	8,638.38	1,202.51	-636.32	1,360.46	0.12	0.00	4.05
8,961.00	1.64	109.57	8,729.34	1,201.45	-633.84	1,358.35	0.26	-0.13	-7.67
9,051.00	1.90	113.86	8,819.29	1,200.42	-631.27	1,356.22	0.32	0.29	4.77
9,142.00	1.61	112.48	8,910.25	1,199.32	-628.70	1,354.04	0.32	-0.32	-1.52
LAST SDI F	PRODUCTION MW	D SURVEY							
9,212.00	1.61	112.48	8,980.22	1,198.57	-626.89	1,352.51	0.00	0.00	0.00
PROJECTI	ON TO BIT								

Design Annotations				
Measured	Vertical	Local Coc	ordinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
149.0	00 148.99	0.98	0.40	FIRST SDI MWD SURFACE SURVEY
2,529.0	0 2,433.35	530.56	-285.52	LAST SDI MWD SURFACE SURVEY
2,683.0	00 2,577.10	578.02	-313.78	FIRST SDI PRODUCTION MWD SURVEY
9,142.0	00 8,910.25	1,199.32	-628.70	LAST SDI PRODUCTION MWD SURVEY
9,212.0	00 8,980.22	1,198.57	-626.89	PROJECTION TO BIT

Checked By:	Approved By:	Date:	

8/24/2015 10:59:39AM Page 5 COMPASS 5000.1 Build 74

					U	IS ROC	KIES R	EGION	
					Opera	ation S	Summa	ary Report	
Well: NBU 1022-	-9C1CS \	/ELLOW						Spud date: 6/2	1/2015
Project: UTAH-U	IINTAH			Site: NBL	J 1022-90	G PAD			Rig name no.:
Event: COMPLE	TION			Start date	. 0/24/20	115			End date: 10/22/2015
Active datum: RI		41.00usft (al	bove Mean S				0/S/22/E/	9/0/0/26/PM/N/16	
Date		Time	Duration	Phase	Code	Sub	P/U	MD from	Operation
8/31/2015	30	art-End -	(hr)			Code		(usft)	
9/8/2015	6:45	- 7:00	0.25	SUBSPR	48		Р		HSM.
		- 8:30	1.50	SUBSPR	47	С	Р		CHANGE OIL & GREESE RIG.
		- 9:00	0.50	SUBSPR	30	G	Р		ROAD RIG F/ NBU 1022-5K.
		- 11:30	2.50	SUBSPR	46	E	P		WAIT FOR PROD EQUIP T/ BE SPOTTED.
		- 17:30	6.00	SUBSPR	31	I	Р		RU RIG & SPOT EQUIP. OPEN WELL 0 PSI. ND WH, NU BOP. RU RIG FLOOR & TBG EQUIP. PREP & TALLY NEW 23/8 P-110 TBG. PU 37/8 BIT & POBS. PU & RIH W/ 111 JTS 23/8 P-110. EOT @ 3527'. SWIFN.
9/9/2015	6:45	- 7:00	0.25	SUBSPR	48		Р		HSM.
	7:00	- 11:30	4.50	SURFPR	31	I	Р		OPEN WELL 0 PSI. CONT RIH F/ 3527'. PU TOTAL OF 287JTS 23/8 P-110 TBG, TAG CMT @ 9100'.
		- 13:00	1.50	SURFPR	44	A	Р		RU DRL EQUIP. BRK CONV CIRC. DRL OUT CMT F/ 9100' - 9150' (FC @ 9153') CIRC WELL CLEAN. SHUT DOWN PUMPING. RD DRL EQUIP.
	13:00	- 17:00	4.00	SURFPR	31	I	Р		POOH LD 175 JTS 23/8 P-110. EOT @ 3584'. SWIFN.
9/10/2015		- 7:00	0.25	SURFPR	48		Р		HSM.
	7:00	- 9:30	2.50	SURFPR	31	I	Р		OPEN WELL 0 PSI. CONT POOH LD 113 JTS 23/8 P-110 & BHA. RD TBG EQUIP & RIG FLOOR. FILL WELL BORE W/ TREATED T-MAC. ND BOP, NU WH. SWI.
	9:30	- 15:00	5.50	SURFPR	30	G	Р		RD RIG RACK OUT RIG EQUIP. ROAD RIG T/ NBU 394 (ARCHIES BENCH) SPOT RIG IN. SDFN.
	13:00	- 15:00	2.00	SURFPR	41	Α	Р		MIRU CUTTER WL. PU CBL TOOLS. RIH TAG PBTD @ 9152'. LOG UP F/ 9150' T/ 8952'. POOH. RDMO CUTTERS WL. SWI.
9/24/2015	7:00	- 7:15	0.25	SUBSPR	48		Р		HSM, JSA
	7:15	- 15:00	7.75	SUBSPR	52	A	Р		FILL 4 1/2" CSG & SURFACE CSG W/ T-MAC, P/T F/V & 4 1/2" CSG TO 7,000 PSI FOR 15 MIN, TIME: 9:13AM TO 9:28AM, PRESS: 7,001 PSI TO 6,960 PSI, LOST: 41 PSI, NO COMMUNICATION W/ SURFACE CSG SURFACE CSG HAD "250" PSI, BLOW DOWN IN 30 SECONDS, P/T SURFACE CSG TO 500 PSI FOR 5 MIN, TIME: 9:46AM TO 9:51AM, PRESS: 505 PSI TO 460 PSI, LOST: 45 PSI, INSTAL POP OFF ASSEMBLY
9/25/2015		-							
10/4/2015	8:00	- 9:00	1.00	FRAC	37	E	Р		RU EL RIH PERFED 1ST STAGE AS DESIGNED POOH SWIFN

11/16/2015 10:46:19AM 1

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: **Event: COMPLETION** End date: 10/22/2015 Start date: 9/24/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea P/U Date Time Duration Phase Code Sub MD from Operation Start-End (hr) Code (usft) 10/8/2015 5:45 - 6:00 0.25 FRAC 48 Ρ HSM, SLIPS, TRIPS & FALLS, RED ZONE 6:00 - 7:00 1.00 **FRAC** 36 Н Р P/T TO 8000 PSI FOR 15 MIN, LOST 870 PSI 7:00 - 0:00 17.00 **FRAC** 36 Н Ρ FRAC STG #1) WHP 950 PSI, BRK 3148 PSI @ 2.9 BPM. ISIP 2285 PSI, FG. 0.69 ISIP 2517 PSI, FG. 0.72, NPI 232 PSI X/O TO W/L SET HALL 8K CBP & PERF STG #2 AS PER DESIGN FRAC STG #2) WHP 800 PSI, BRK 6121 PSI @ 4.1 BPM. ISIP 2320 PSI, FG. 0.71 ISIP 2859 PSI, FG. 0.77, NPI 539 PSI X/O TO W/L SET HALL 8K CBP & PERF STG #3 AS PER DESIGN 10/9/2015 0:00 - 0:00 24.00 Р FRAC Н FRAC STG #3) WHP 2060 PSI, BRK 2831 PSI @ 4.2 BPM. ISIP 2701 PSI, FG. 0.73 ISIP 2987 PSI, FG. 0.79, NPI 286 PSI. X/O TO W/L SET HALL 8K CBP & PERF STG # 4 AS PER DESIGN FRAC STG #4) WHP 640 PSI, BRK 3178 PSI @ 3.4 BPM. ISIP 2057 PSI, FG. 0.68 ISIP 2582 PSI, FG. 0.75, NPI 525 PSI. X/O TO W/L SET HALL 8K CBP & PERF STG # 5 AS PER DESIGN 10/10/2015 0:00 - 23:00 23.00 **FRAC** 36 Н Р FRAC STG #5) WHP 480 PSI, BRK 2876 PSI @ 3.3 BPM. ISIP 867 PSI, FG. 0.55 ISIP 2325 PSI, FG. 0.73, NPI 1458 PSI. SET HAL 8K CBP & PERF STG #6 AS DESIGNED. FRAC STG #6) WHP 300 PSI, BRK 1668 PSI @ 3.5 BPM. ISIP 982 PSI, FG. 0.57 ISIP 2436 PSI, FG. 0.76, NPI 1454 PSI. SET HAL 8K CBP & PERF STG # 7 AS DESIGNED. FRAC STG #7) WHP 490 PSI, BRK 2456 PSI @ 3.7 BPM. ISIP 1409 PSI, FG. 0.63 ISIP 2613 PSI, FG. 0.79, NPI 1204 PSI. X/O TO W/L SET HAL 8K KILL PLUG AS PER DESIGN WATER: 11,173 BBLS SAND: 236,700 # SCALE: 240 GAL

11/16/2015 10:46:19AM 2

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10/21/2015

- 7:30

0.50

DRLOUT

48

RECEIVED: Nov. 19, 2015

HSM, PICKING UP TBG W/ PIPE WRANGLER.

BIO: 157 GAL

RDMO

Sundry Number: 67839 API Well Number: 43047545680000 **US ROCKIES REGION Operation Summary Report** Well: NBU 1022-9C1CS YELLOW Spud date: 6/21/2015 Project: UTAH-UINTAH Site: NBU 1022-9G PAD Rig name no.: **Event: COMPLETION** End date: 10/22/2015 Start date: 9/24/2015 UWI: SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/2309/0/0 Active datum: RKB @5,241.00usft (above Mean Sea P/U Date Time Duration Phase Code Sub MD from Operation Start-End (hr) Code (usft) 7:30 - 15:00 7.50 DRLOUT Ρ 4 OF 4, TALLY & PU 37/8 BIT, POBS & 226 JTS 23/8 P-110 TAGGED UP @ 7147' RU DRLG EQUIP. FILL & TEST CSG & BOPS TO 3,000 PSI, PREP TO D/O IN AM, SWI SDFN 7:00 - 7:30 10/22/2015 0.50 **DRLOUT** 48 HSM, PICKING UP TBG W/ PIPE WRANGLER, & WATCHING PSI. 7:30 - 17:00 9.50 DRLOUT С 44 4 of 4, BROKE CIRC CONV, RIH. C/O 20' SAND TAG 1ST PLUG @ 7173' DRL PLG IN 5 MIN, 100 PSI INCREASE RIH. C/O 30' SAND TAG 2ND PLUG @ 7480' DRL PLG IN 5 MIN, 0 PSI INCREASE RIH. C/O 20' SAND TAG 3RD PLUG @ 7805' DRL PLG IN 8 MIN, 600 PSI INCREASE RIH. C/O 20' SAND TAG 4TH PLUG @ 8230' DRL PLG IN 10 MIN, 200 PSI INCREASE RIH. C/O 20' SAND TAG 5TH PLUG @ 8493' DRL PLG IN 8 MIN, 200 PSI INCREASE RIH. C/O 30' SAND TAG 6TH PLUG @ 8629' DRL PLG IN 10 MIN, 500 PSI INCREASE RIH. C/O 30' SAND TAG 7TH PLUG @ 8806' DRL PLG IN 5 MIN, 600 PSI INCREASE RIH. C/O TO 9150.52', CIRC CLN, RD SWIVEL, L/D 17 JTS, LAND TBG, ND BOPS NU WH, TEST FL, PUMPED OFF BIT, TURN WELL TO FB CREW.RIGGED DOWN MOVED CMT BLOCKS, RIGGED UP ON NBU 292 RTP SDFN. KB = 13' 41/16 HANGER = .83' 272 JTS 23/8 P-110 = 8605.22' POBS W/ 1.875 X/N = 2.20' EOT @ 8621.25' TWTR 11,173 BBLS TWR 1,000 BBLS TWLTR 10,173 BBLS 315 JT HAULED OUT, P-110. 272 LANDED 43 TO RETURN 17:00 - 17:00 0.00 **DRLOUT** WELL TURNED TO SALES @ 8:30 HR ON 10/22/2015, 1.8 MCFD, 1920 BWPD, 1658 # FCP, 1263# FTP, 1920 BWPD, 20/64" CK.

11/16/2015 10:46:19AM 3

US ROCKIES REGION

General

Customer Information

Company	US ROCKIES REGION
Representative	
Address	

Well/Wellbore Information

Well	NBU 1022-9C1CS YELLOW	Wellbore No.	OH
Well Name	NBU 1022-9C1CS	Wellbore Name	NBU 1022-9C1CS
Report no.	1	Report date	9/28/2015
Project	UTAH-UINTAH	Site	NBU 1022-9G PAD
Rig Name/No.		Event	COMPLETION
Start date	9/24/2015	End date	10/22/2015
Spud date	6/21/2015	Active datum	RKB @5,241.00usft (above Mean Sea Level)
UWI	SW/NE/0/10/S/22/E/9/0/0/26/PM/N/1687/E/0/230	9/0/0	'

General

Contractor	Job method	Supervisor	
Perforated Assembly	Conveyed method		

Initial Conditions

Summary 1.5

Fluid type		Fluid density	Gross Interval	7,223.0 (usft)-9,062.0 (usft	Start Date/Time	9/28/2015	12:00AM
Surface press.		Estimate res press	No. of intervals	51	End Date/Time	9/28/2015	12:00AM
TVD fluid top		Fluid head	Total shots	168	Net perforation interval		56.00 (usft)
Hydrostatic press.		Press. difference	Avg. shot density	3.00 (shot/ft)	Final surface pressure		
Balance Cond	NEUTRAL				Final press. date		

Intervals

Perforated Interval

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)		Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
9/28/2015 12:00AM	MESAVE RDE/				7,224.0		Gilot	0.410	/7	(111)	120.00	manuacturer		PRODUCTION		

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US ROCKIES REGION

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)	MD base (usft)	Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
	MESAVE RDE/			7,276.0	7,277.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,348.0	7,349.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			7,383.0	7,384.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,410.0	7,411.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,425.0	7,426.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			7,447.0	7,449.0	3.00		0.410 /7			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,552.0	7,553.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			7,577.0	7,578.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,614.0	7,615.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			7,653.0	7,654.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			7,697.0	7,698.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,752.0	7,753.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,773.0	7,774.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
	MESAVE RDE/			7,789.0	7,790.0	3.00		0.410 /6			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			8,012.0	8,013.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			8,030.0	8,031.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,099.0	8,100.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,134.0	8,135.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			8,157.0	8,158.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			8,173.0	8,174.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,194.0	8,195.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		
9/28/2015	MESAVE RDE/			8,212.0	8,213.0	3.00		0.410 /5			120.00		19.00	PRODUCTION		

US ROCKIES REGION

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD top (usft)	MD base (usft)	Shot density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr type /Stage No	Carr size (in)	Phasing (°)	Charge desc. /Charge manufacturer	Charge weight (gram)	Reason	Misrun	How Guns Conveyed
9/28/2015 12:00AM	MESAVE			8,298.0	8,299.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
	MESAVE			8,324.0	8,325.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,363.0	8,364.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,385.0	8,386.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,413.0	8,414.0	3.00		0.410	4		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,425.0	8,426.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
1	MESAVE RDE/			8,460.0	8,461.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,477.0	8,478.0	3.00		0.410 /	4		120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,507.0	8,508.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,524.0	8,525.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,541.0	8,542.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,559.0	8,560.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,576.0	8,578.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,607.0	8,609.0	3.00		0.410 /	3		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,639.0	8,640.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,651.0	8,652.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,662.0	8,663.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
	MESAVE RDE/			8,679.0	8,680.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
1	MESAVE RDE/			8,698.0	8,699.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,733.0	8,734.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,744.0	8,745.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		
9/28/2015 12:00AM	MESAVE RDE/			8,765.0	8,766.0	3.00		0.410 /	2		120.00		19.00	PRODUCTION		

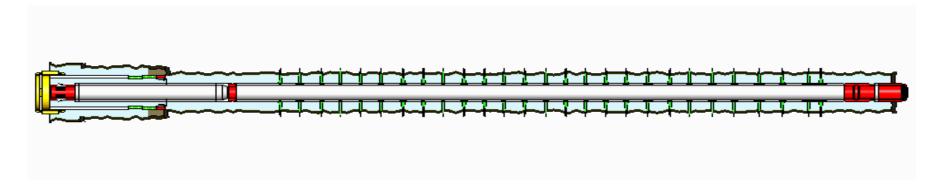
US ROCKIES REGION

2.1 Perforated Interval (Continued)

Date	Formation/	CCL@	CCL-TS	MD	MD	Shot	Misfires/	Diameter	Carr type /Stage No	Carr	Phasing	Charge desc.	Charge	Reason	Misrun	How Guns
	Reservoir	(usft)	(usft)	top	base	density	Add.	(in)		size	(°)	/Charge	weight			Conveyed
				(usft)	(usft)	(shot/ft)	Shot			(in)		manufacturer	(gram)			
9/28/2015	MESAVE			8,900.0	8,902.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															
9/28/2015	MESAVE			8,951.0	8,953.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															
9/28/2015	MESAVE			8,975.0	8,976.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															
9/28/2015	MESAVE			8,991.0	8,992.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															
9/28/2015	MESAVE			9,038.0	9,039.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															
9/28/2015	MESAVE			9,061.0	9,062.0	3.00		0.410	/1		120.00		19.00	PRODUCTION		
12:00AM	RDE/															

3 Plots

3.1 Wellbore Schematic



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